

Fig. 1A



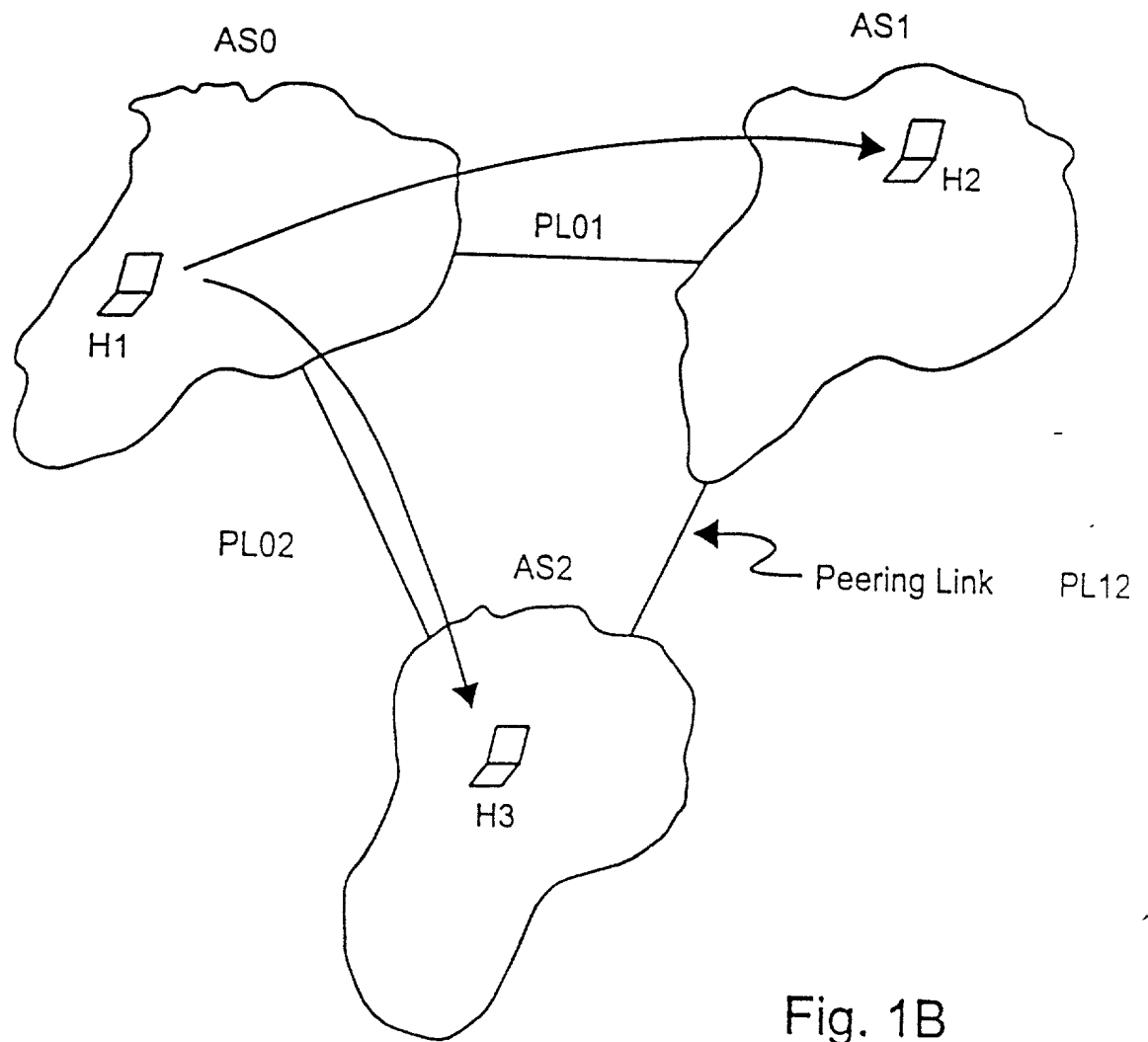


Fig. 1B

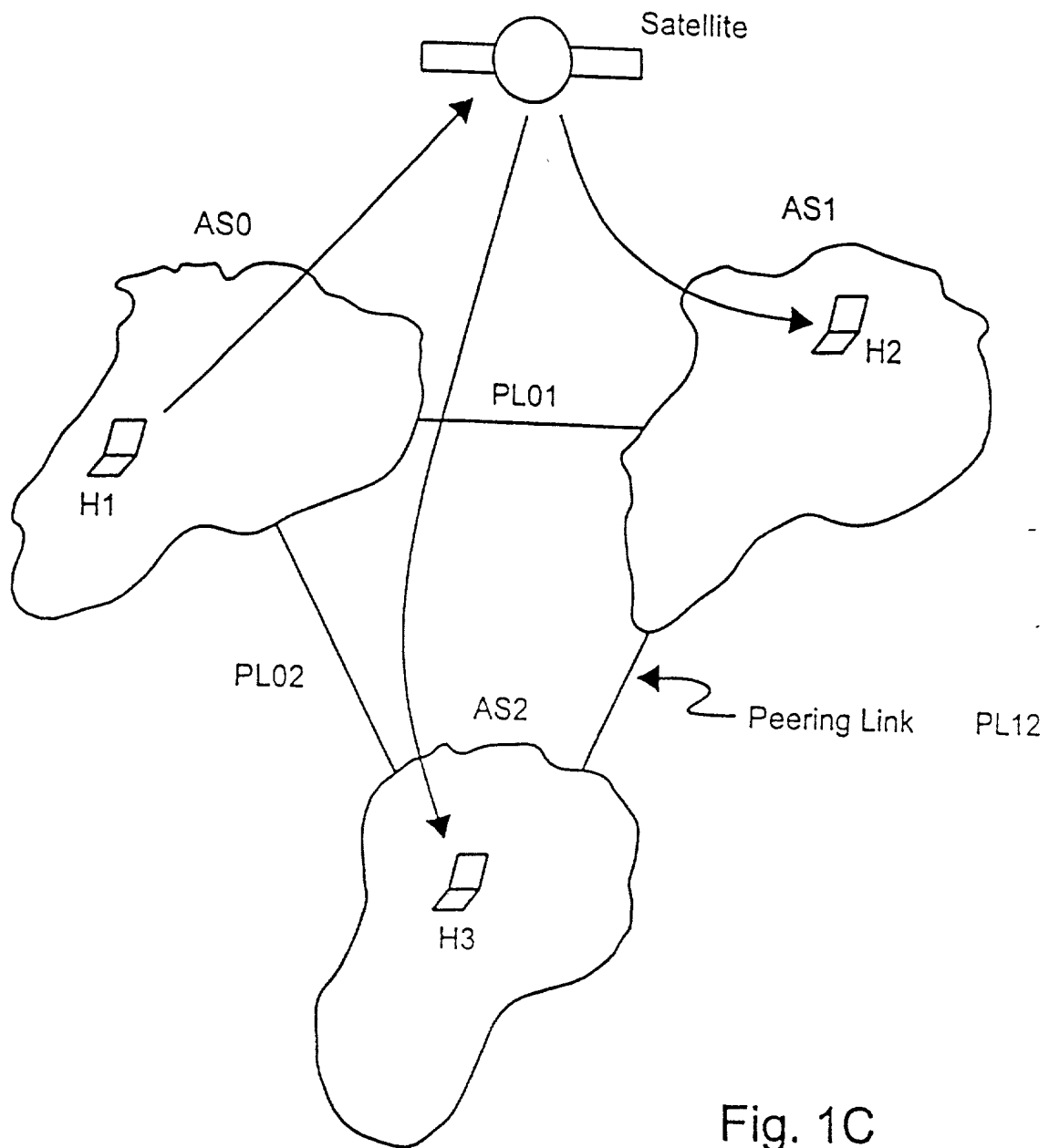


Fig. 1C

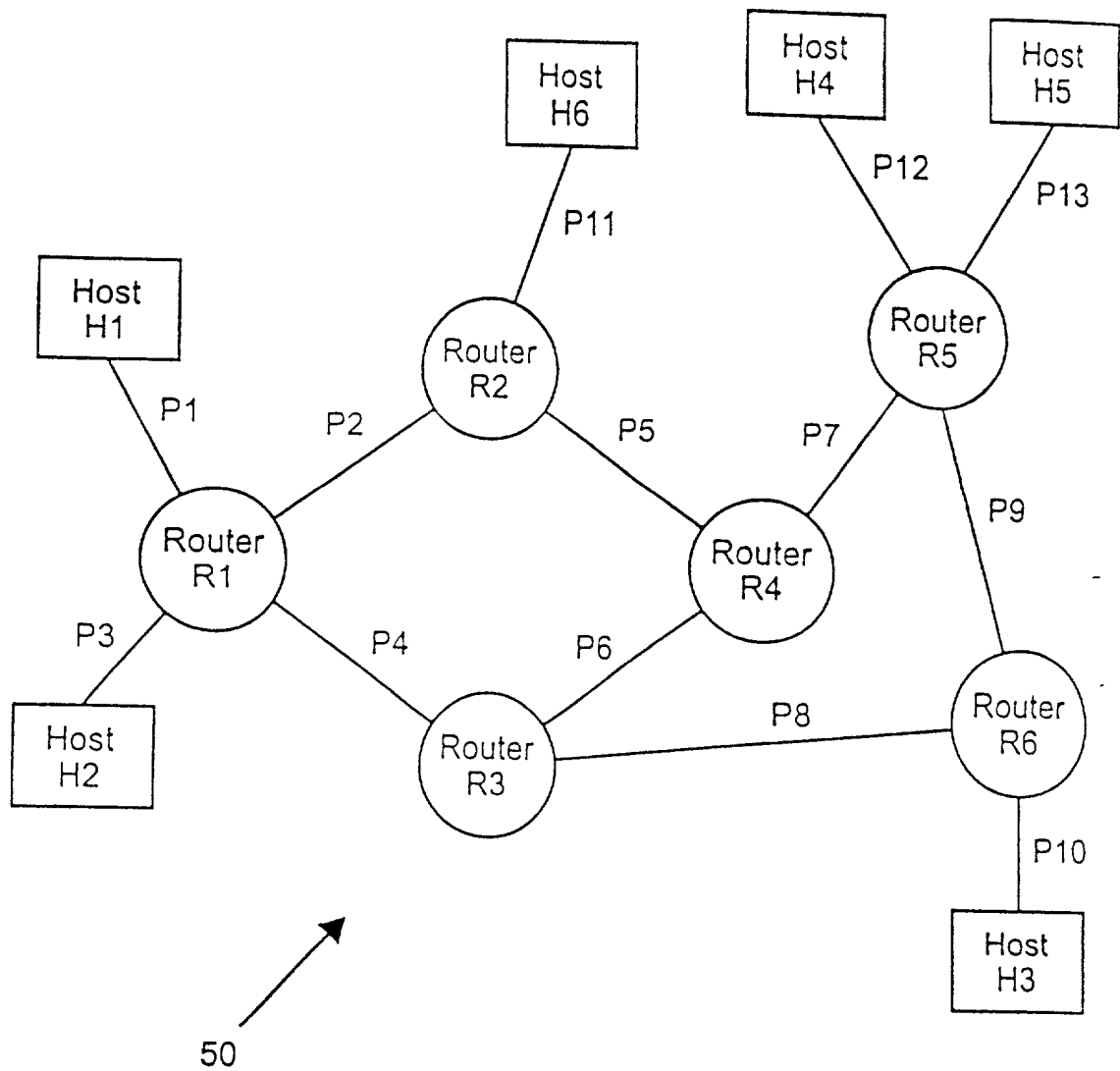


Fig. 1D

Fig. 2

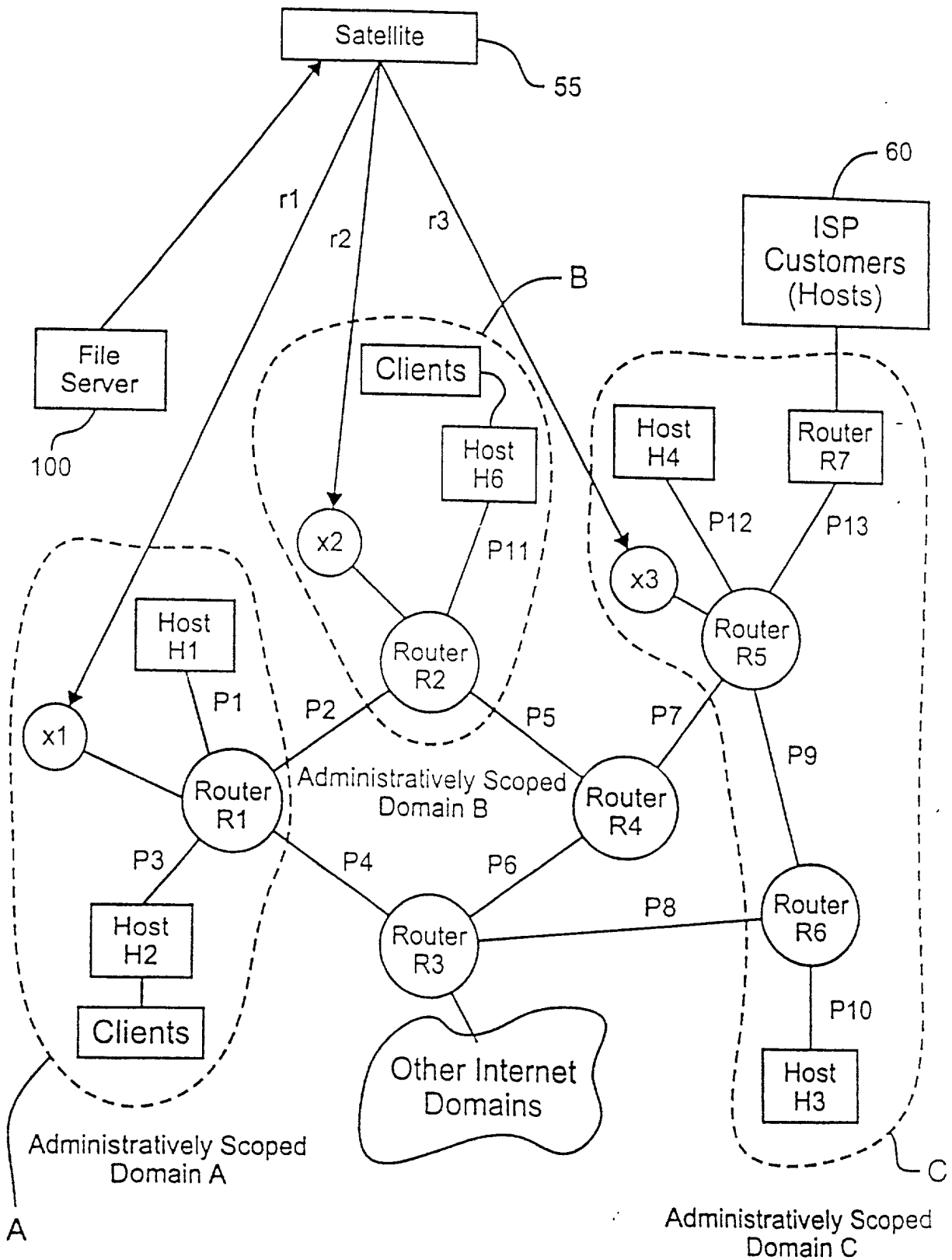
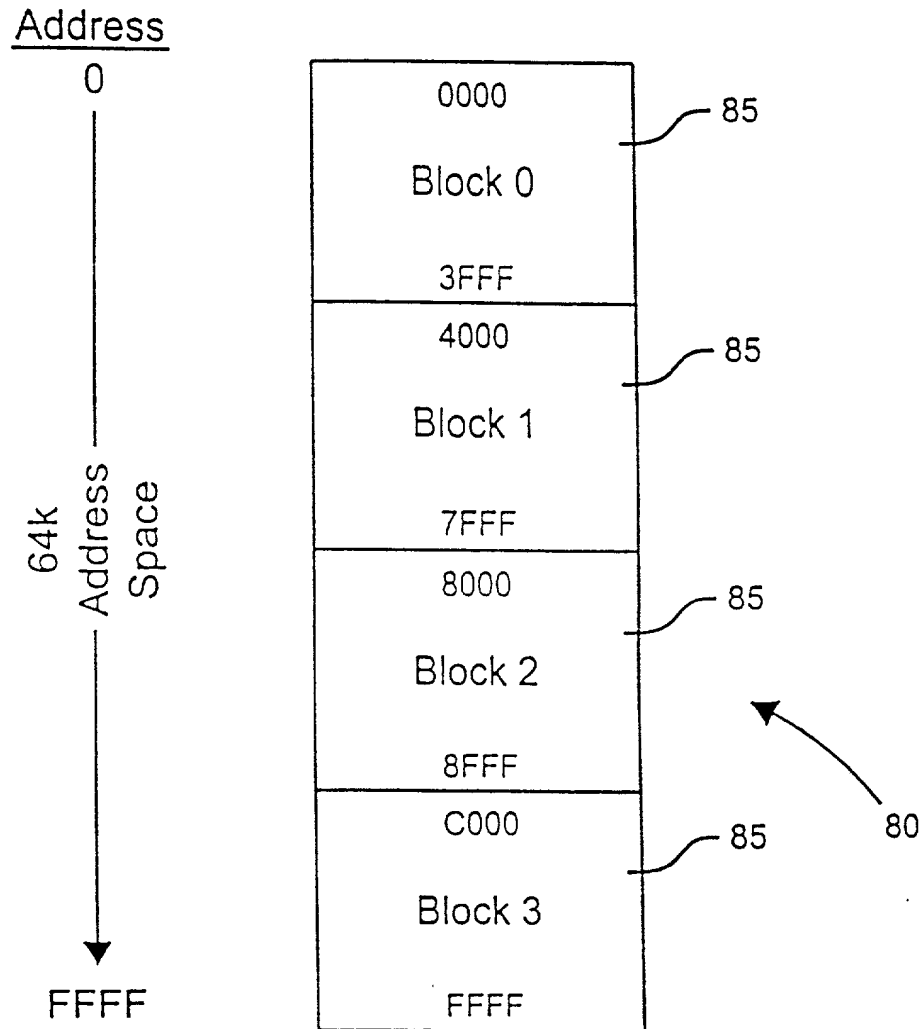


Fig. 3



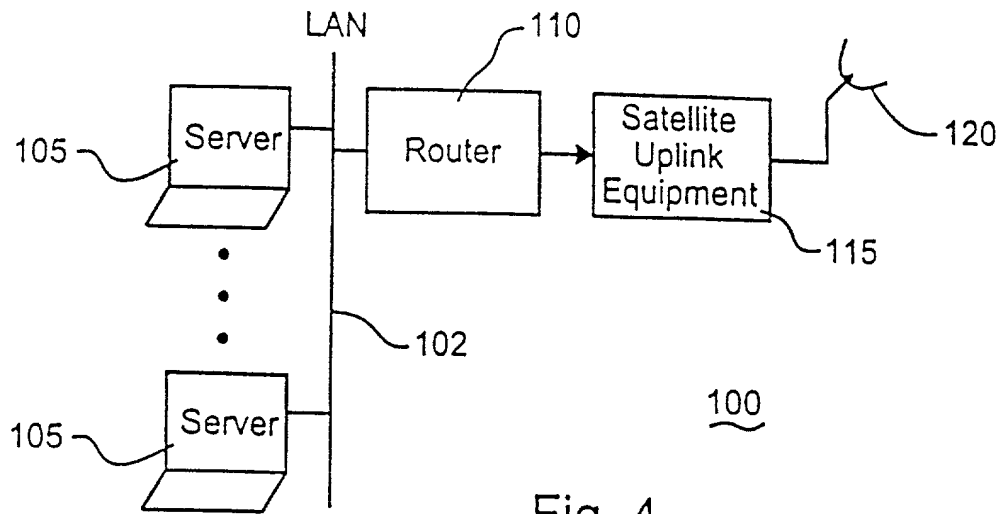


Fig. 4

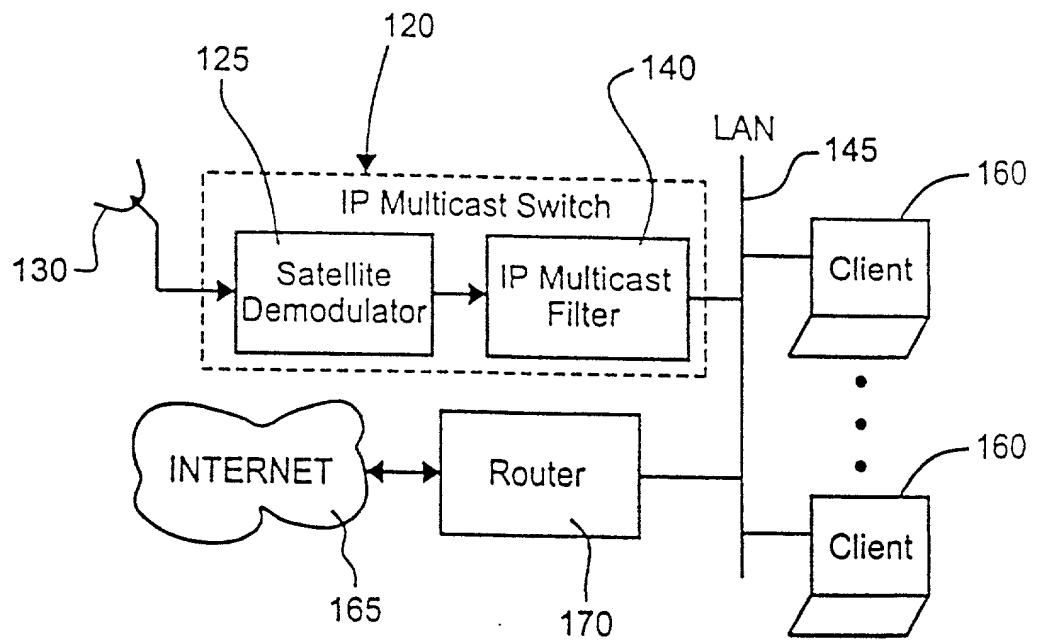
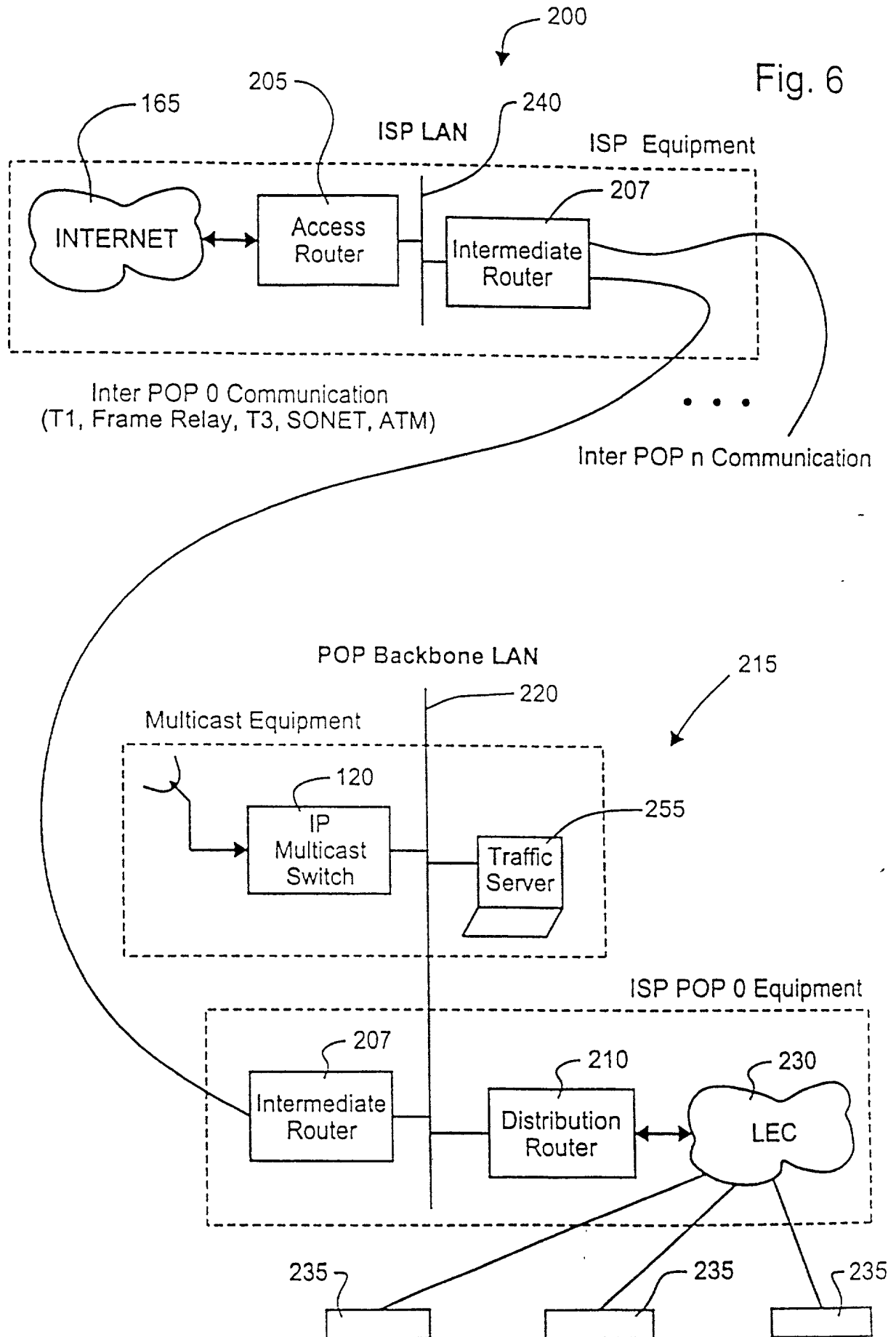


Fig. 5

Fig. 6



80857

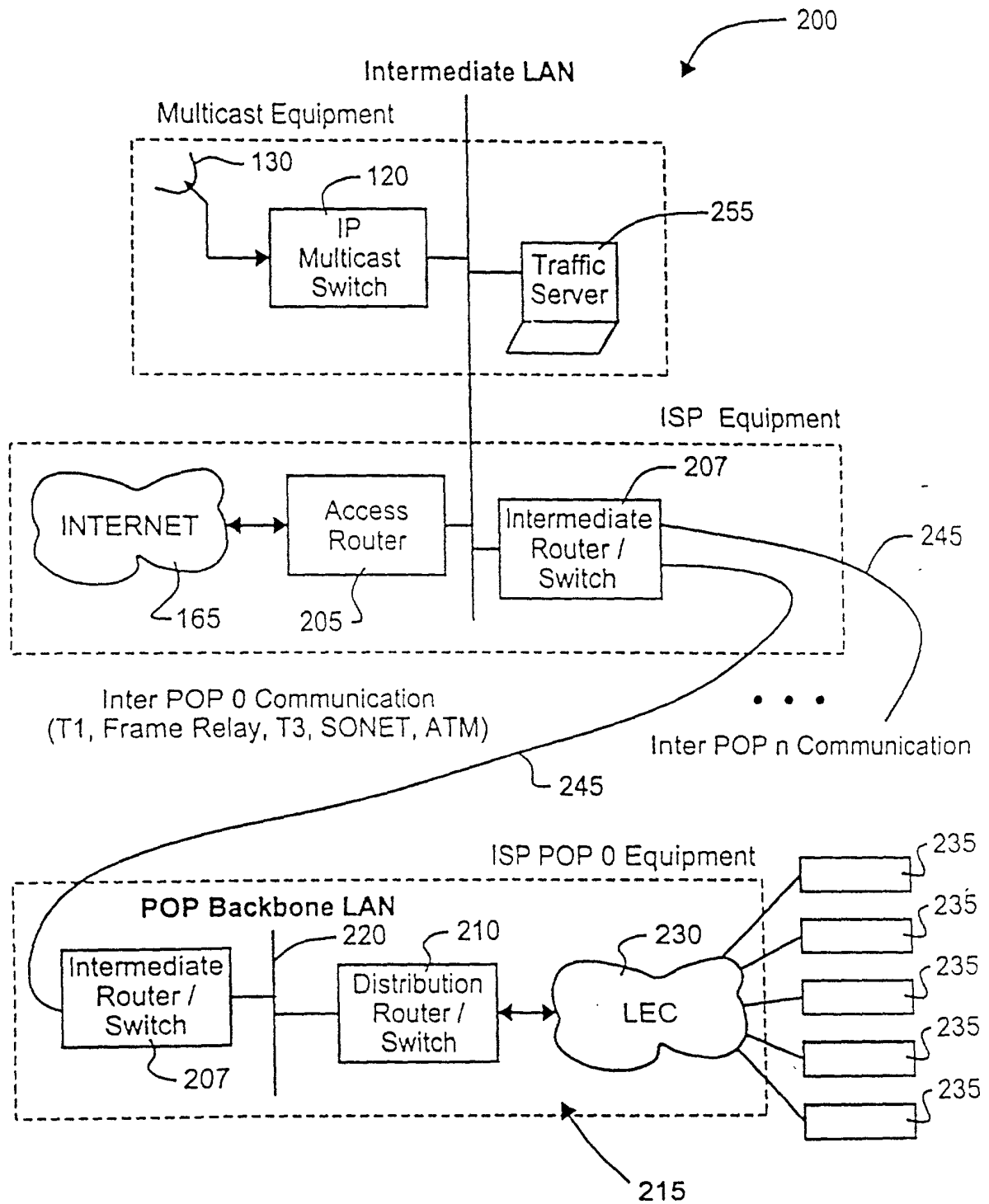
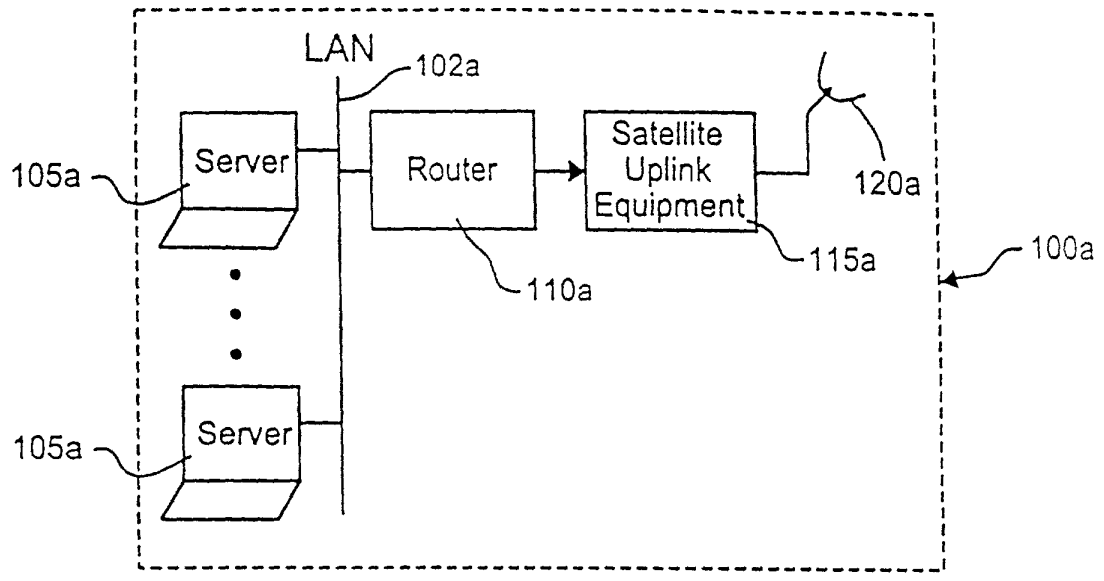
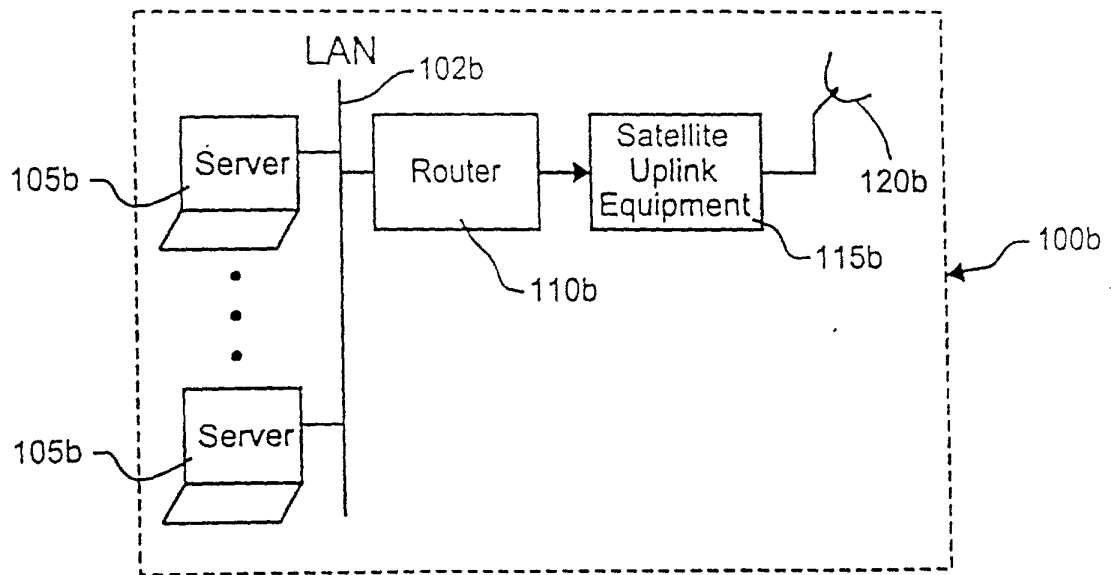


Fig. 7



Transponder 1



Transponder 2

Fig. 8a

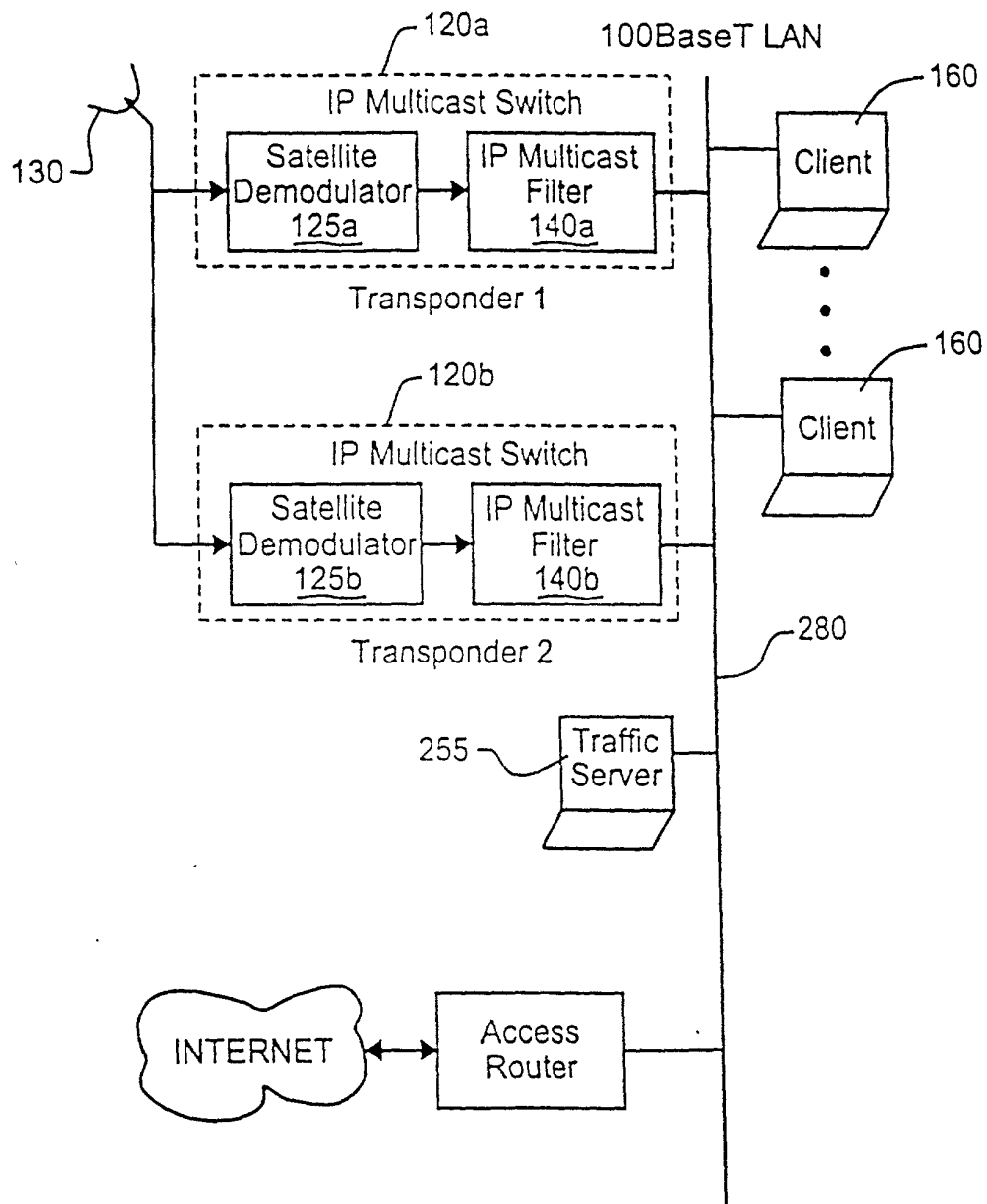


Fig. 8b

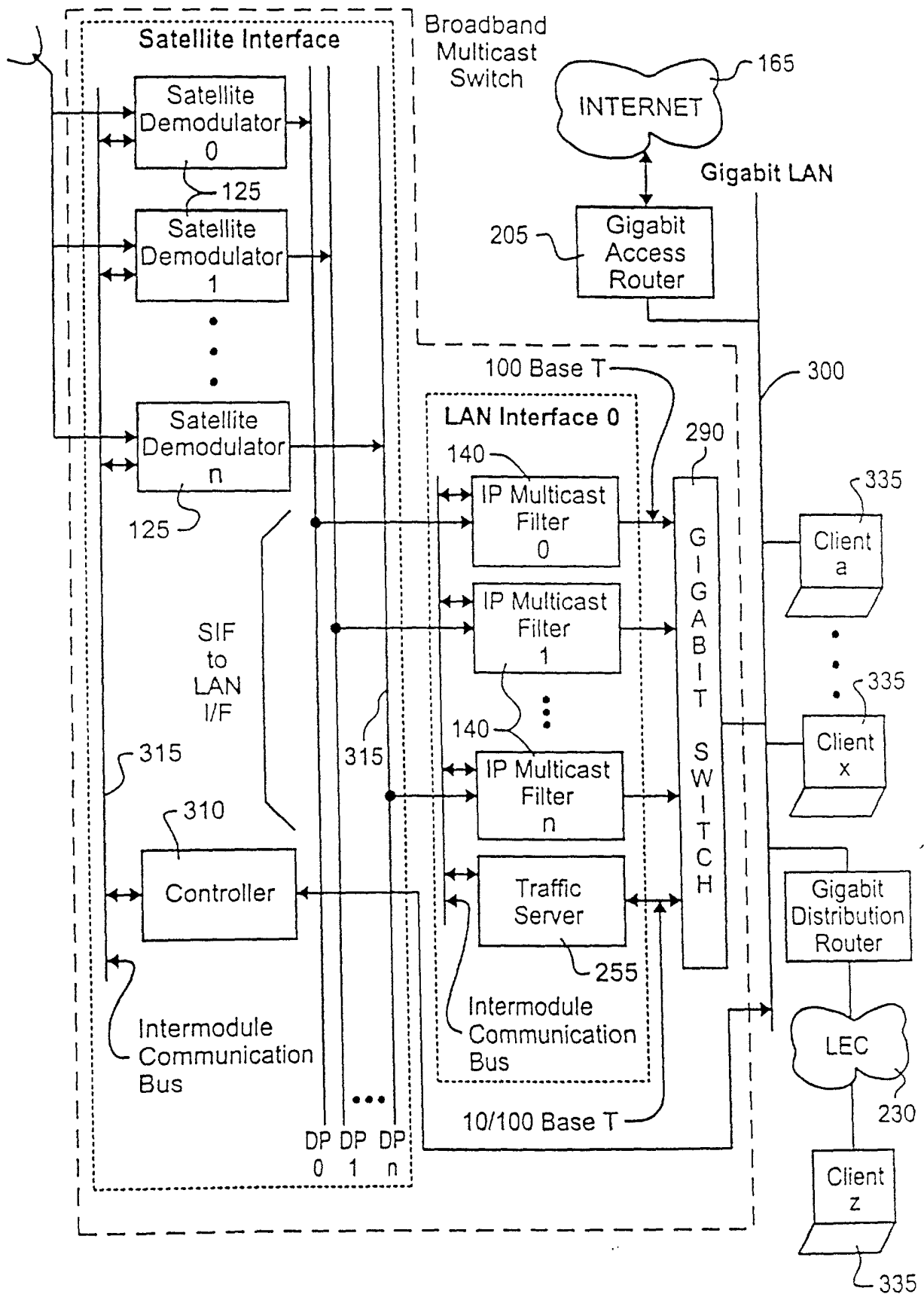


Fig. 9

12457

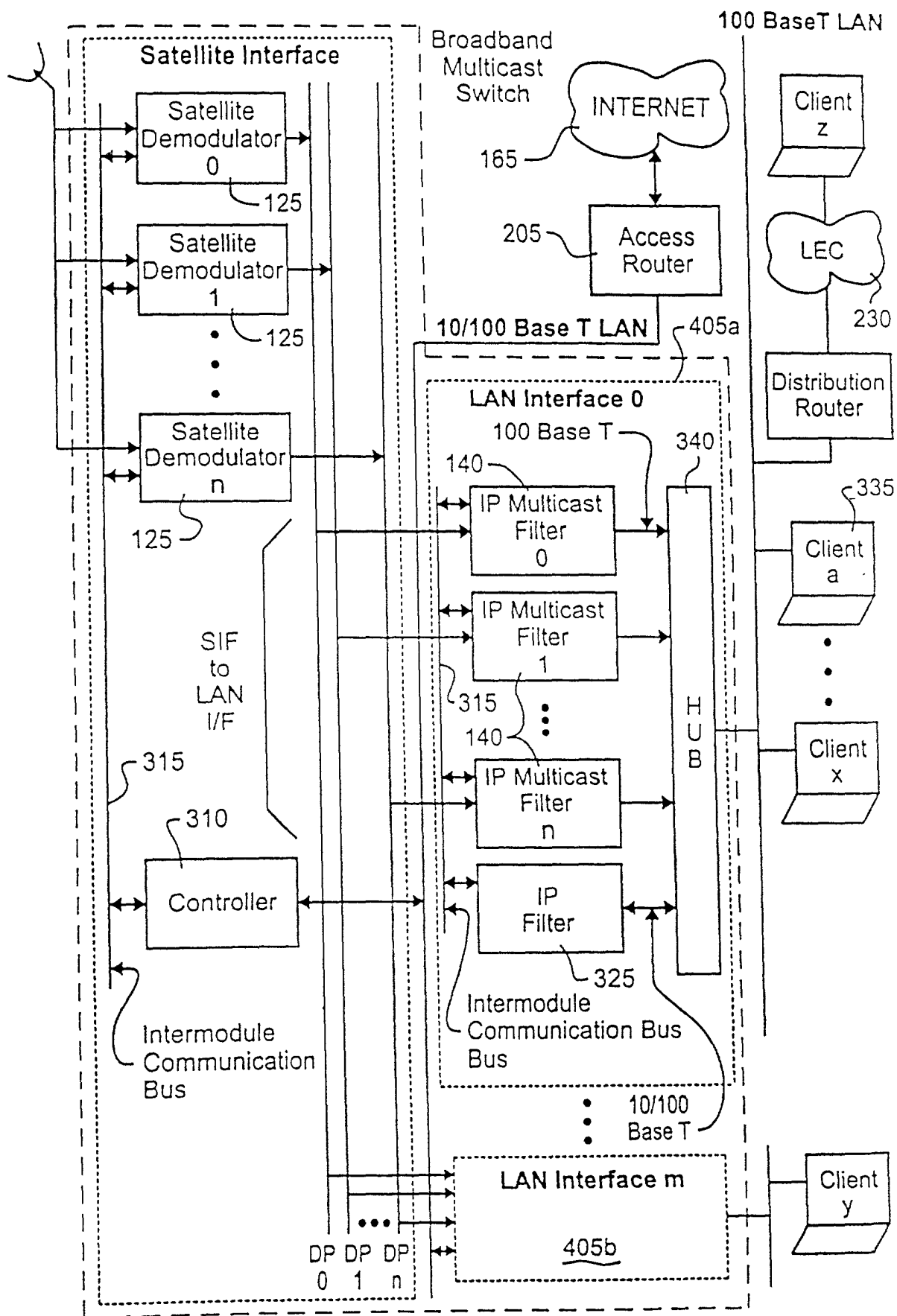


Fig. 10

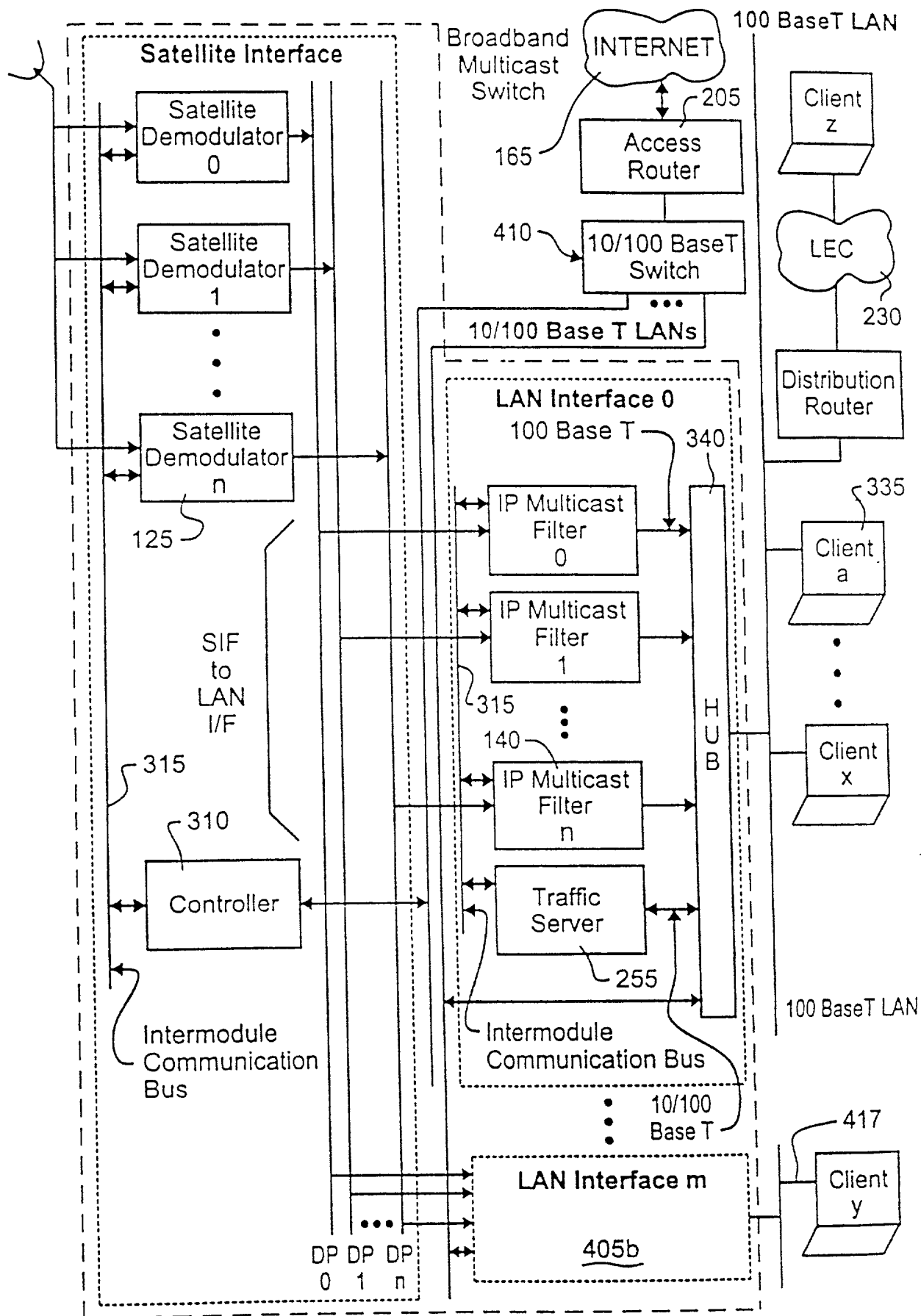
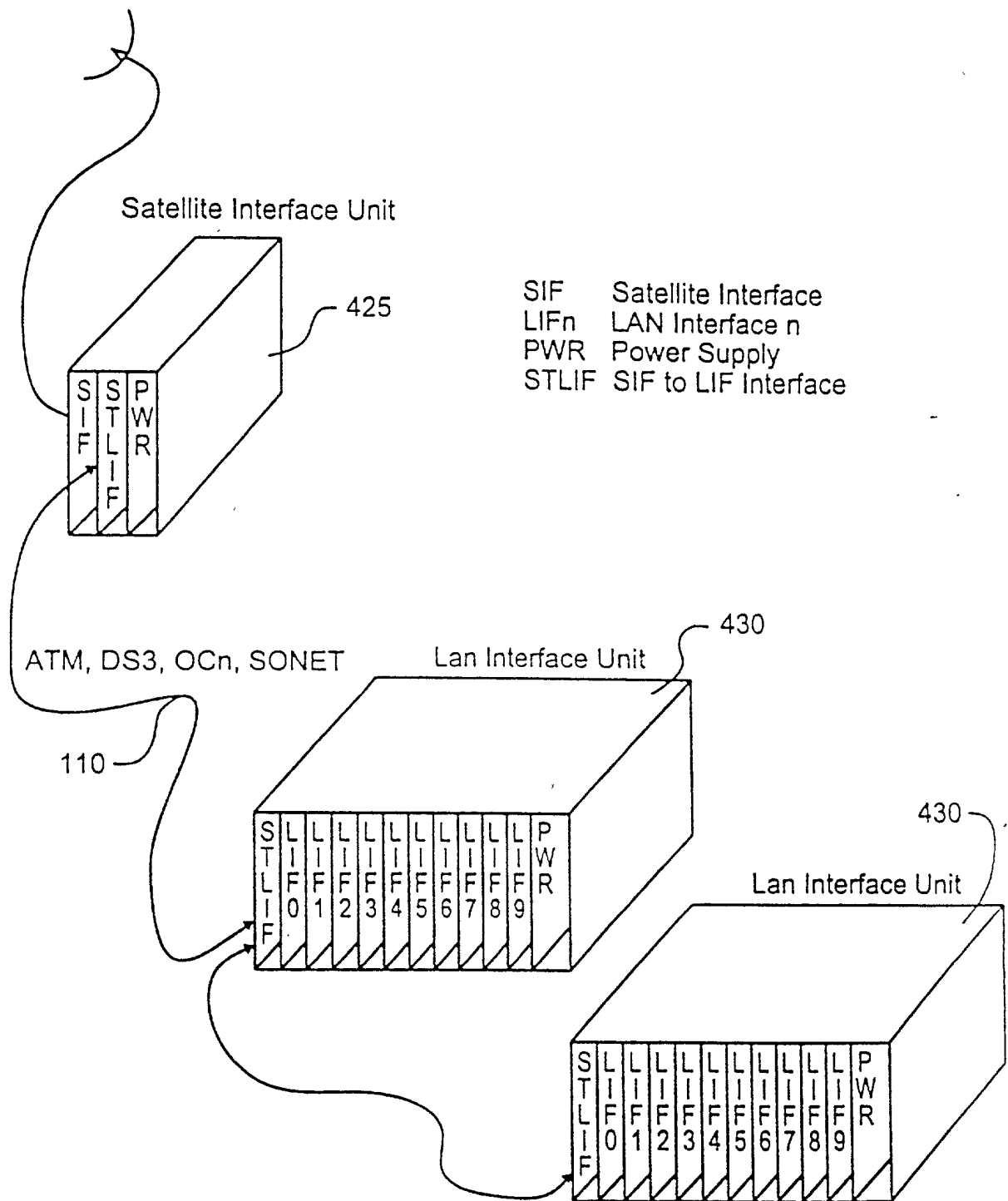


Fig. 11

14857

Fig. 12



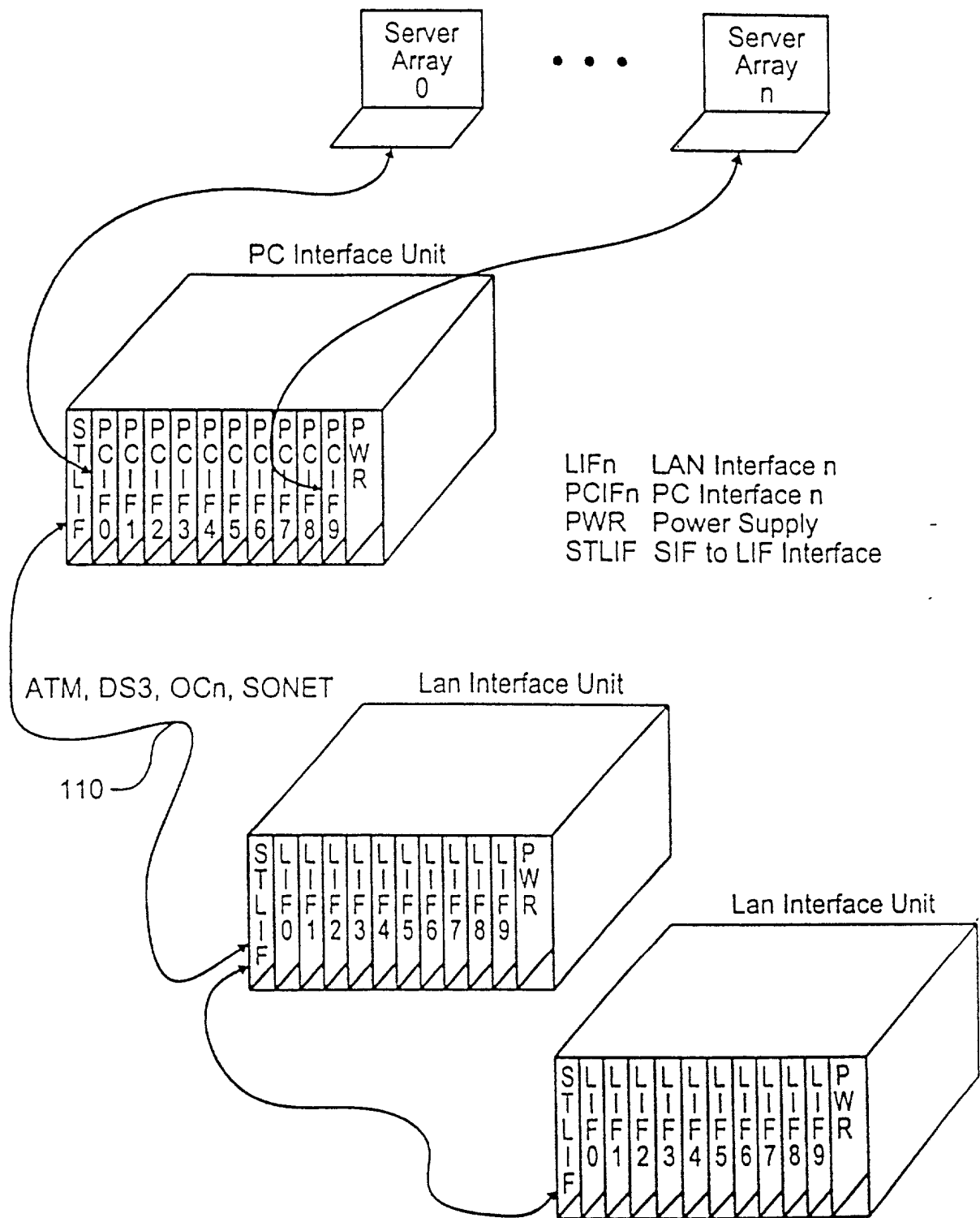


Fig. 13

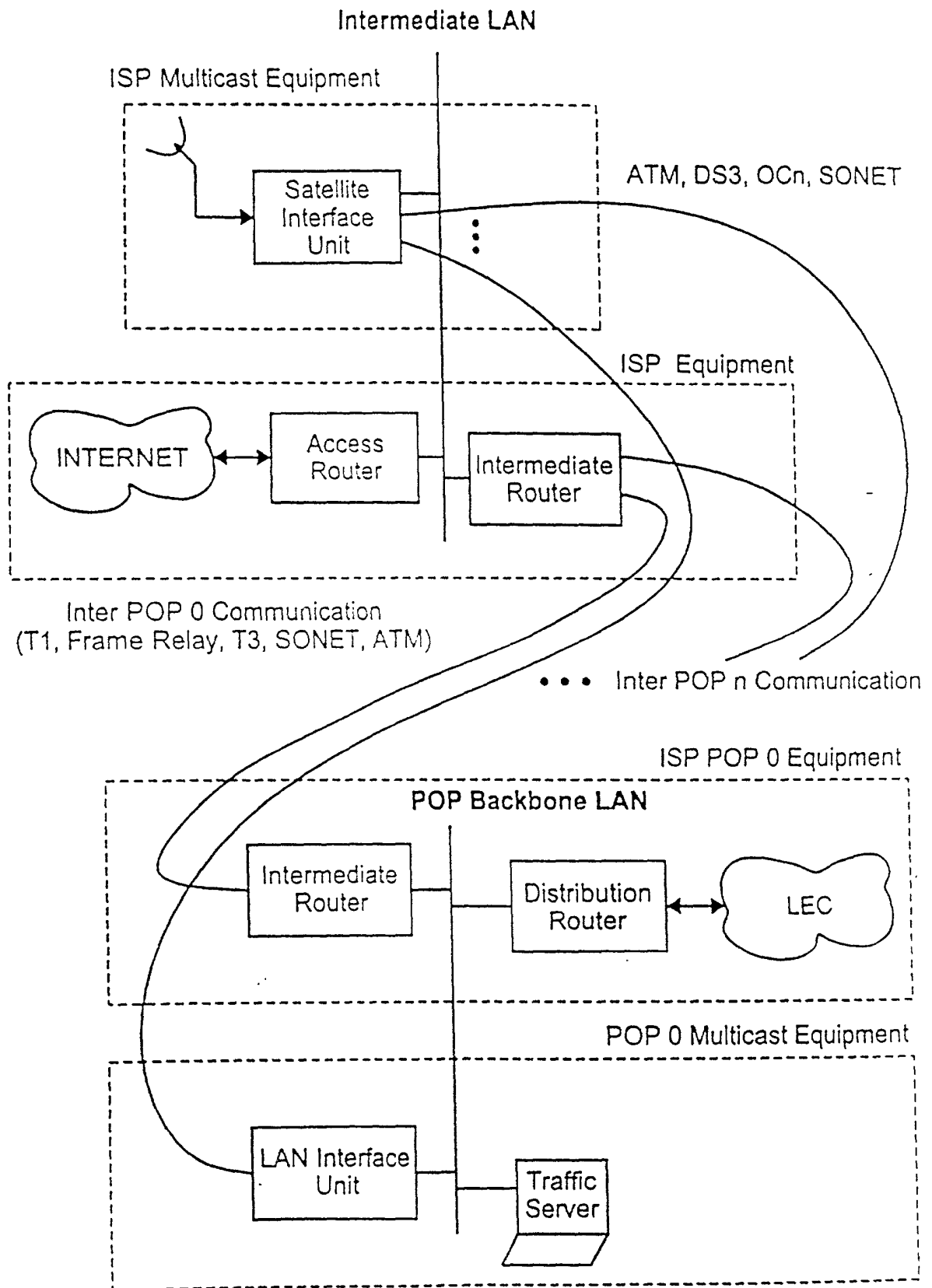


Fig. 14A

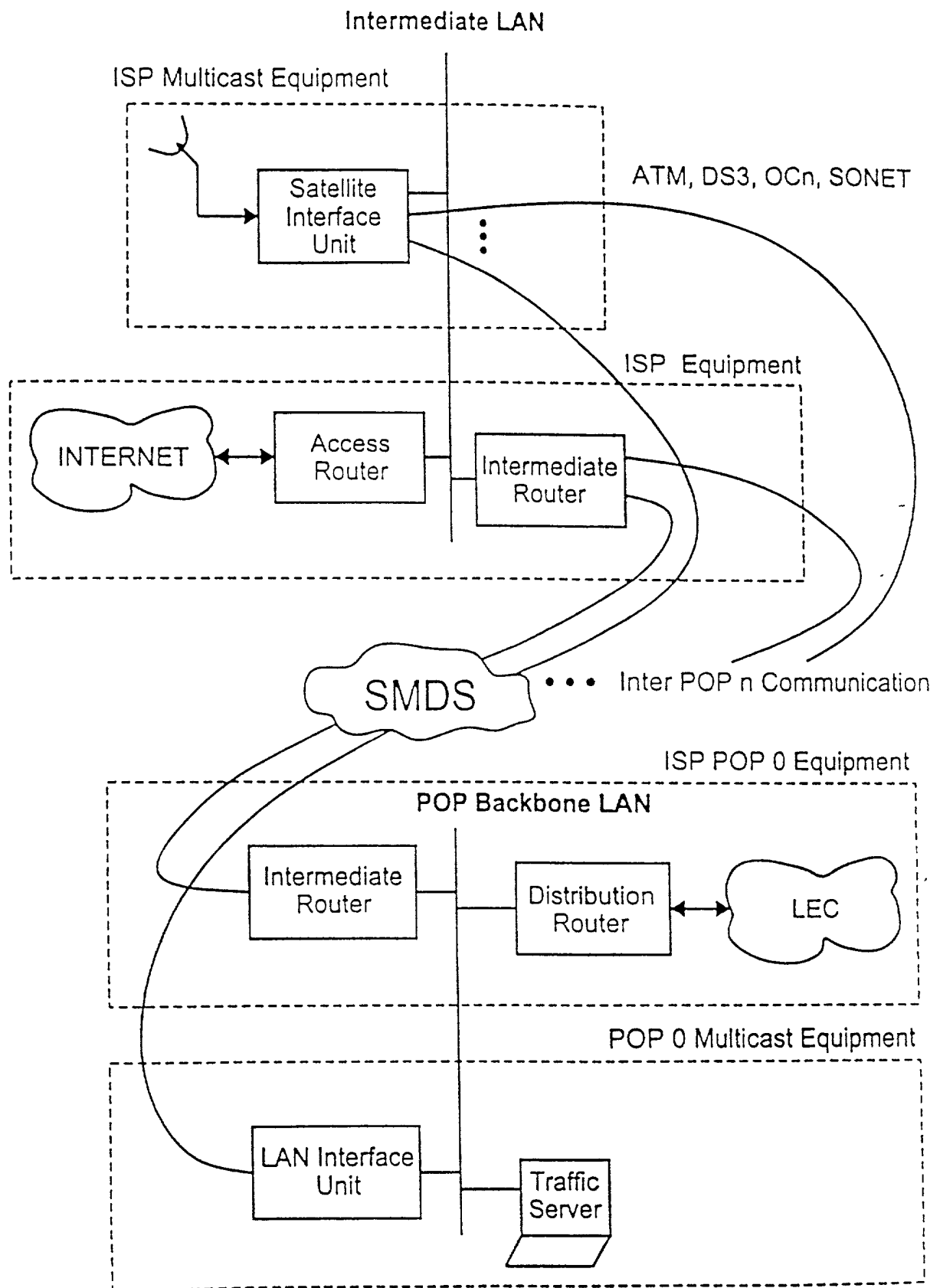


Fig. 14B

1908 57

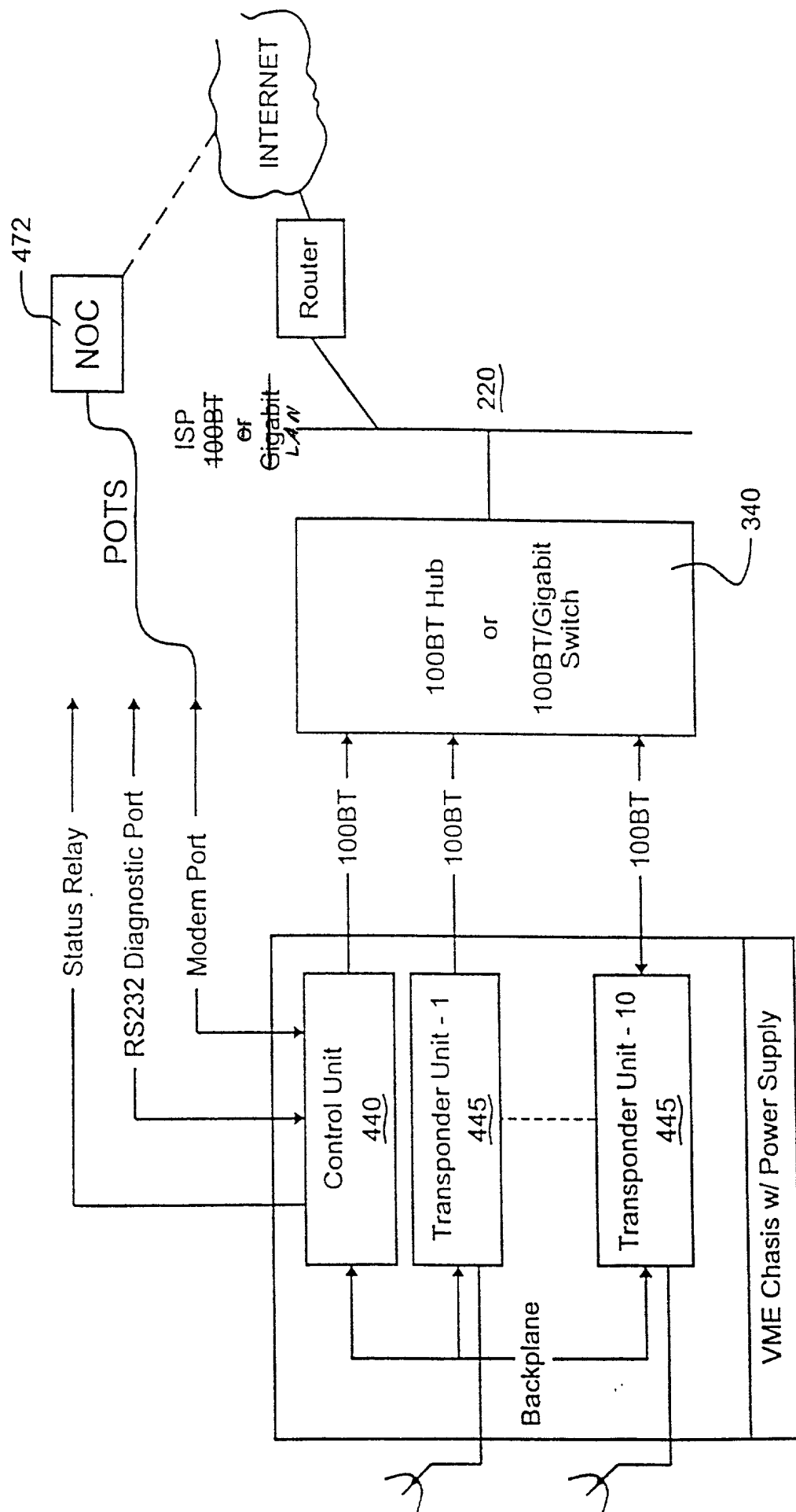
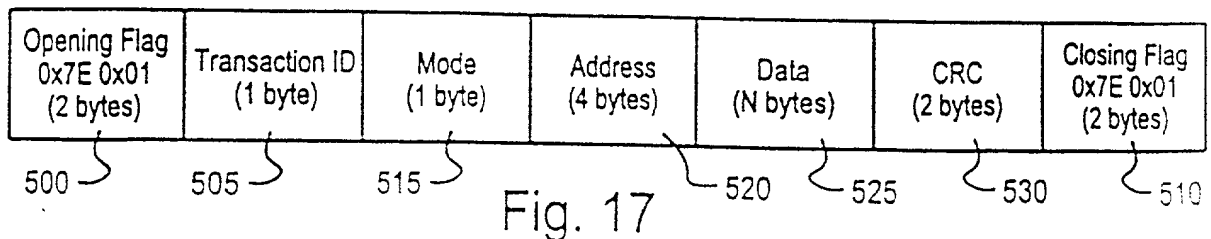
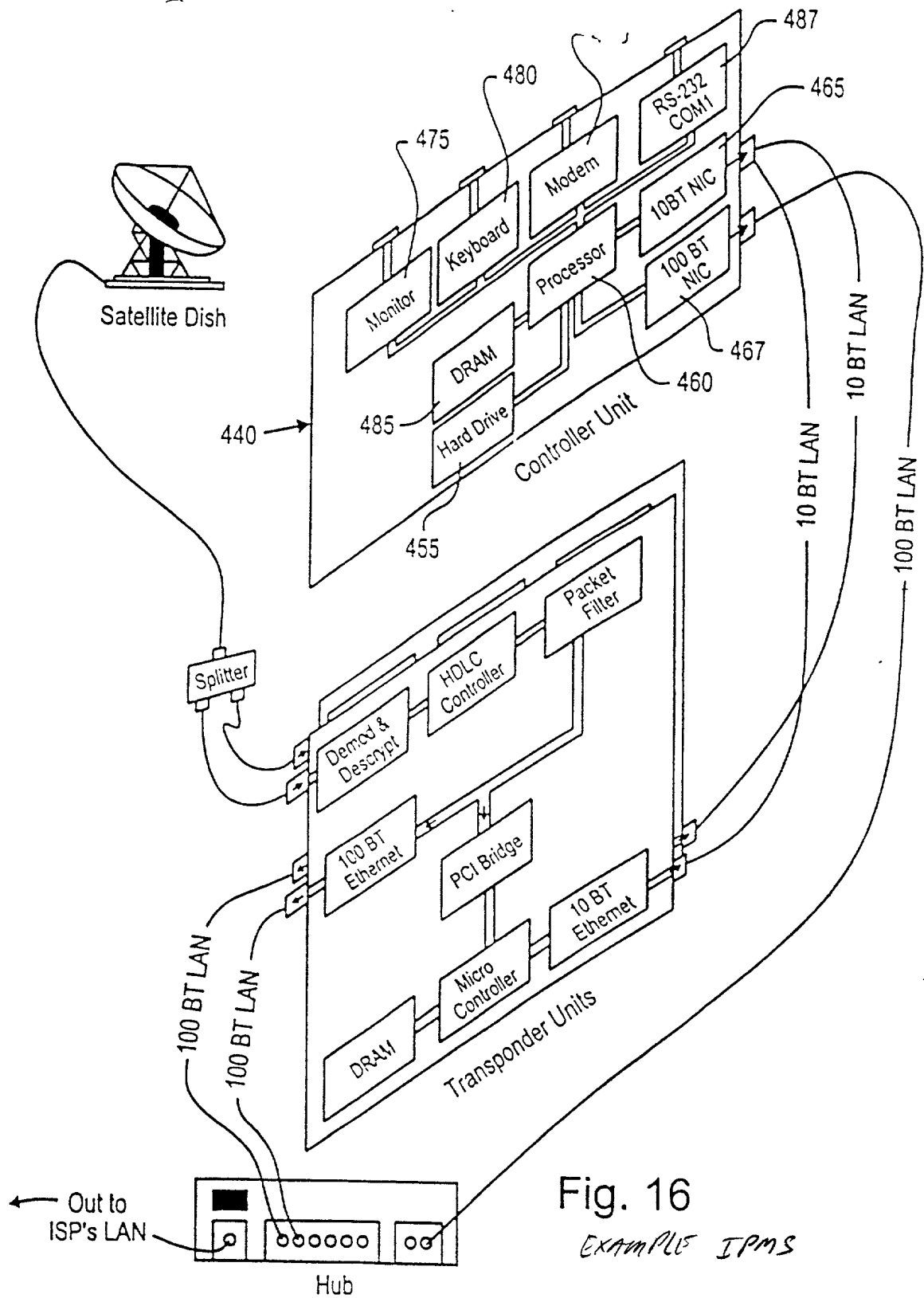


Fig. 15
Example LAN



2108-5

FIG. 18 is a block diagram of a transponder unit, in accordance with the present invention.

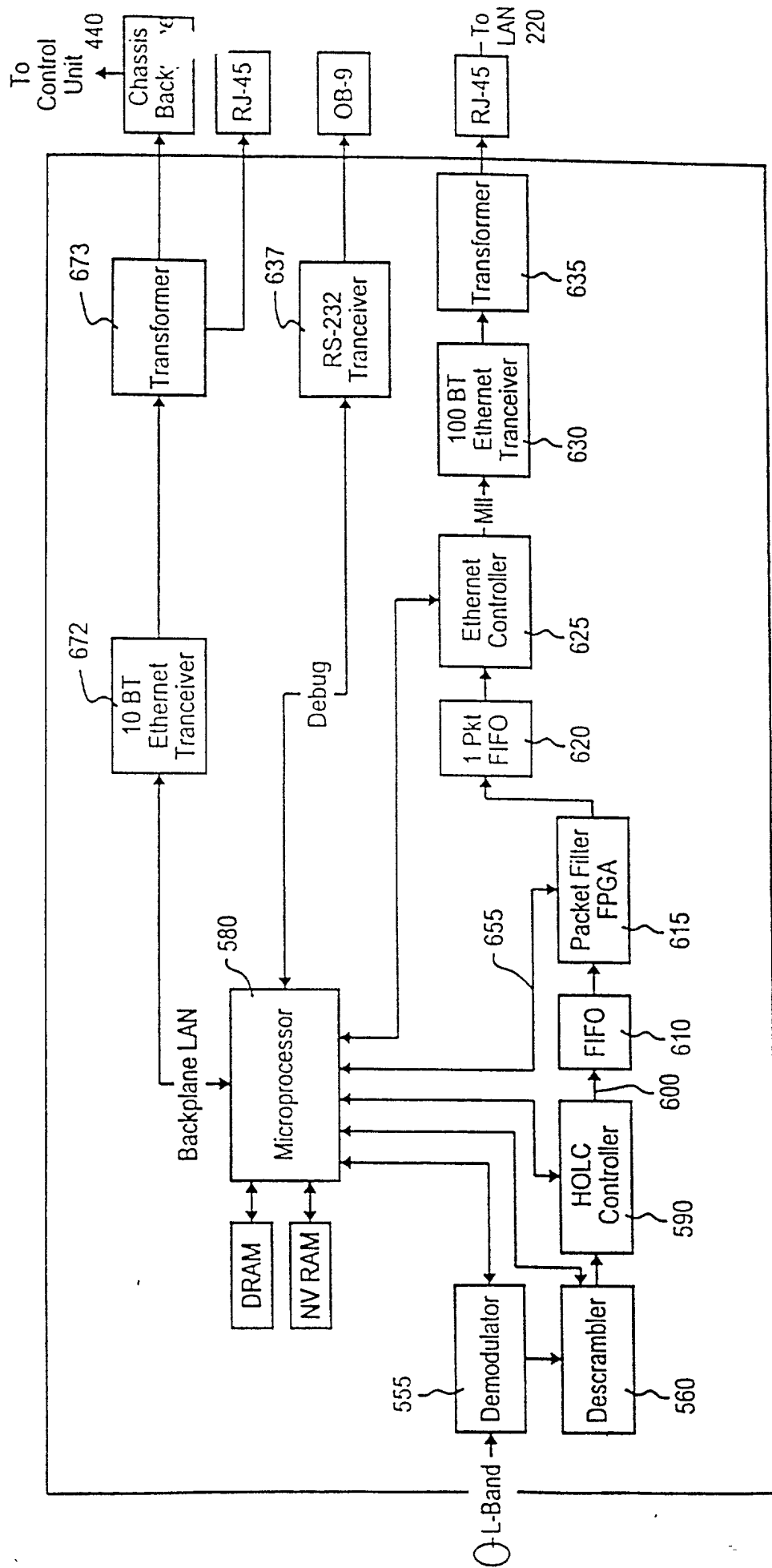


Fig. 18
Transponder unit

2/8/5

Fig. 19 is a block diagram of a system for processing data received from a source. The system includes a demodulator 555, a descrambler FPGA 560, an HDLC controller 590, and a microcontroller 580. The demodulator 555 receives 8 bits of data 565 and provides a clock 570 and data valid 575 signals to the descrambler FPGA 560. The descrambler FPGA 560 provides an HDLC data bus 595, clock, and control signals to the HDLC controller 590. The HDLC controller 590 provides a signal 600 to the microcontroller 580. The microcontroller 580 provides a signal 585 to the HDLC controller 590 and an ISP interface signal to the descrambler FPGA 560.

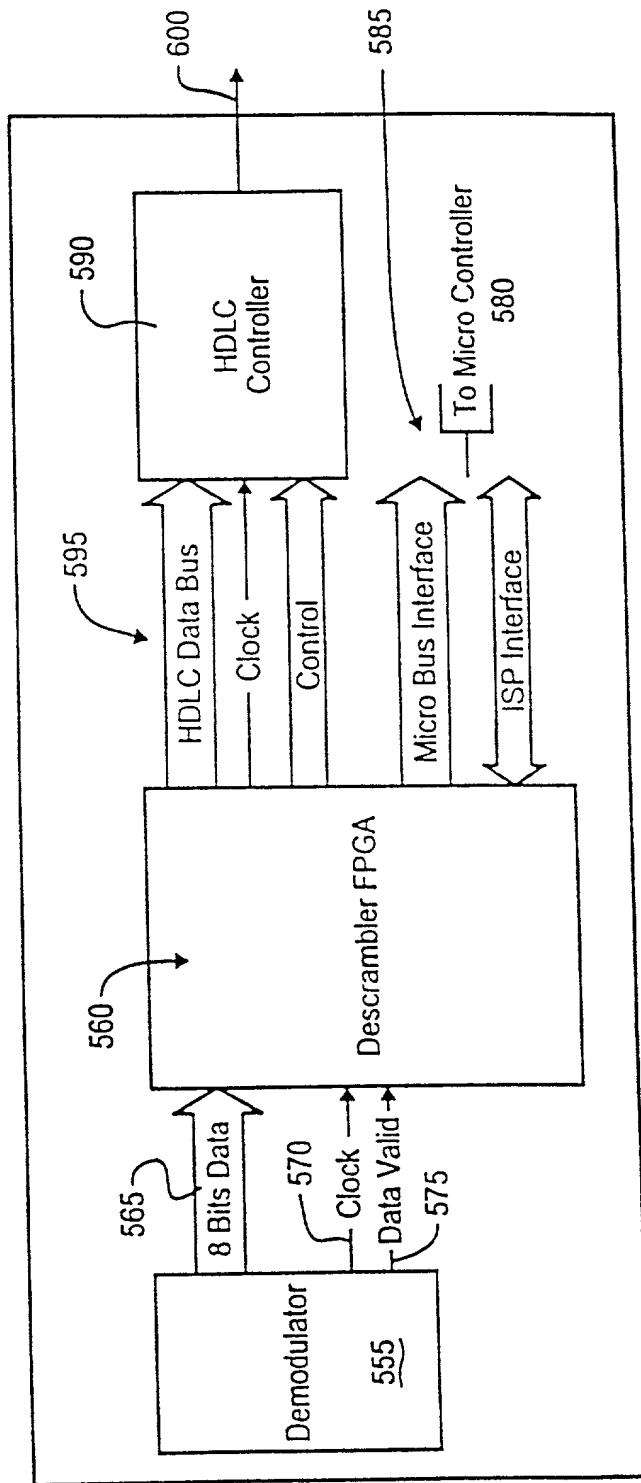


Fig. 19

Copyright 1994 by Intel Corporation

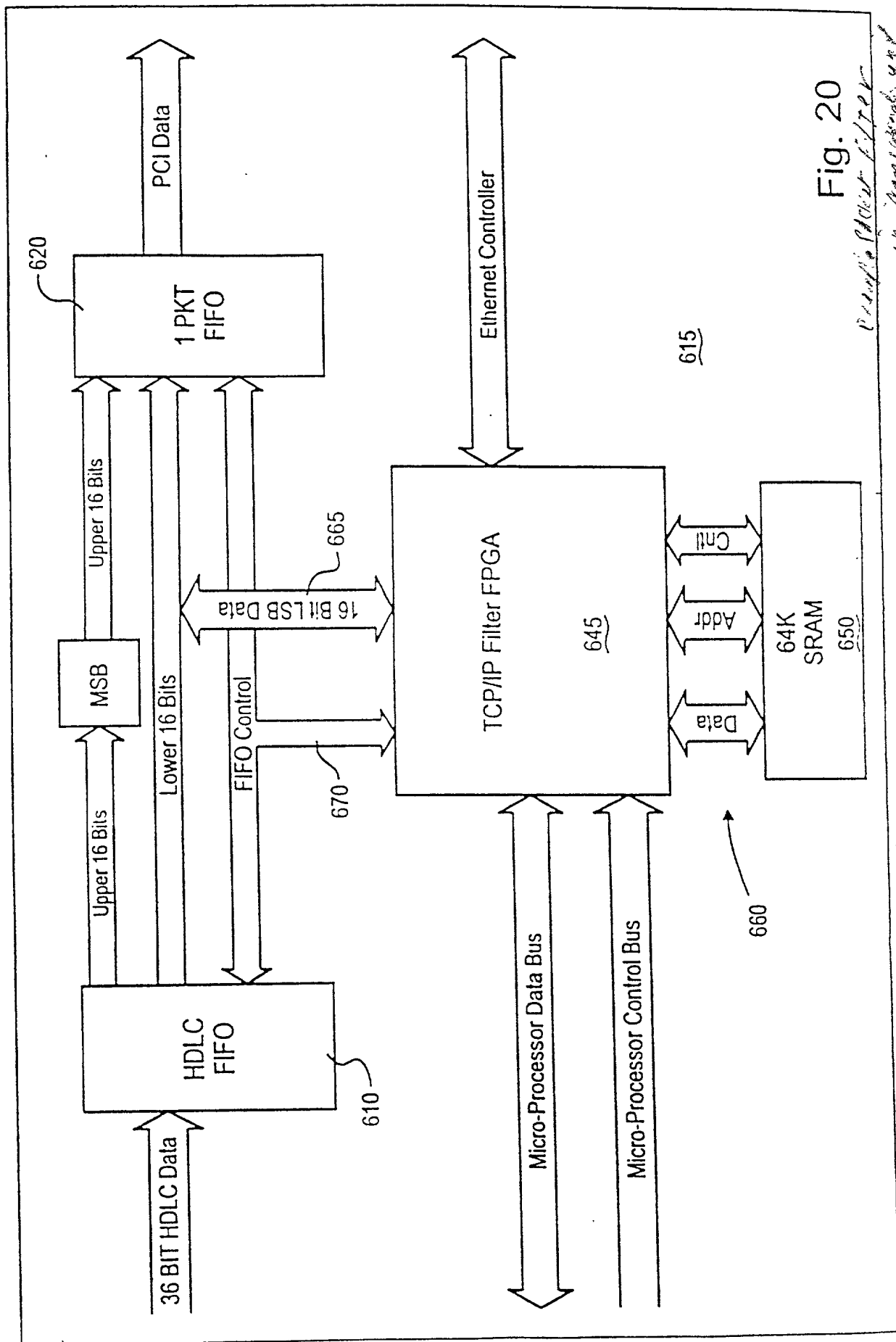


Fig. 20

Example Packet Filter in Transponder 400

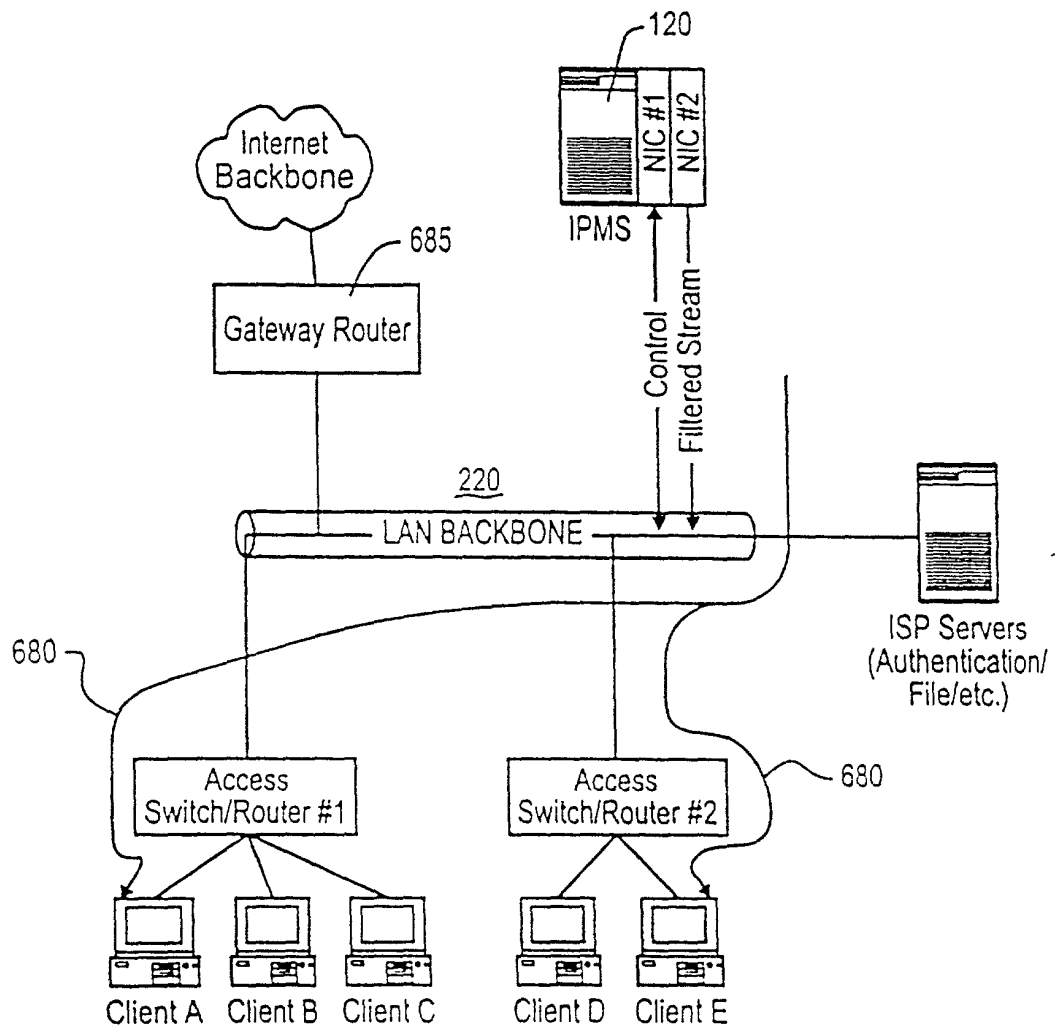


Fig. 21

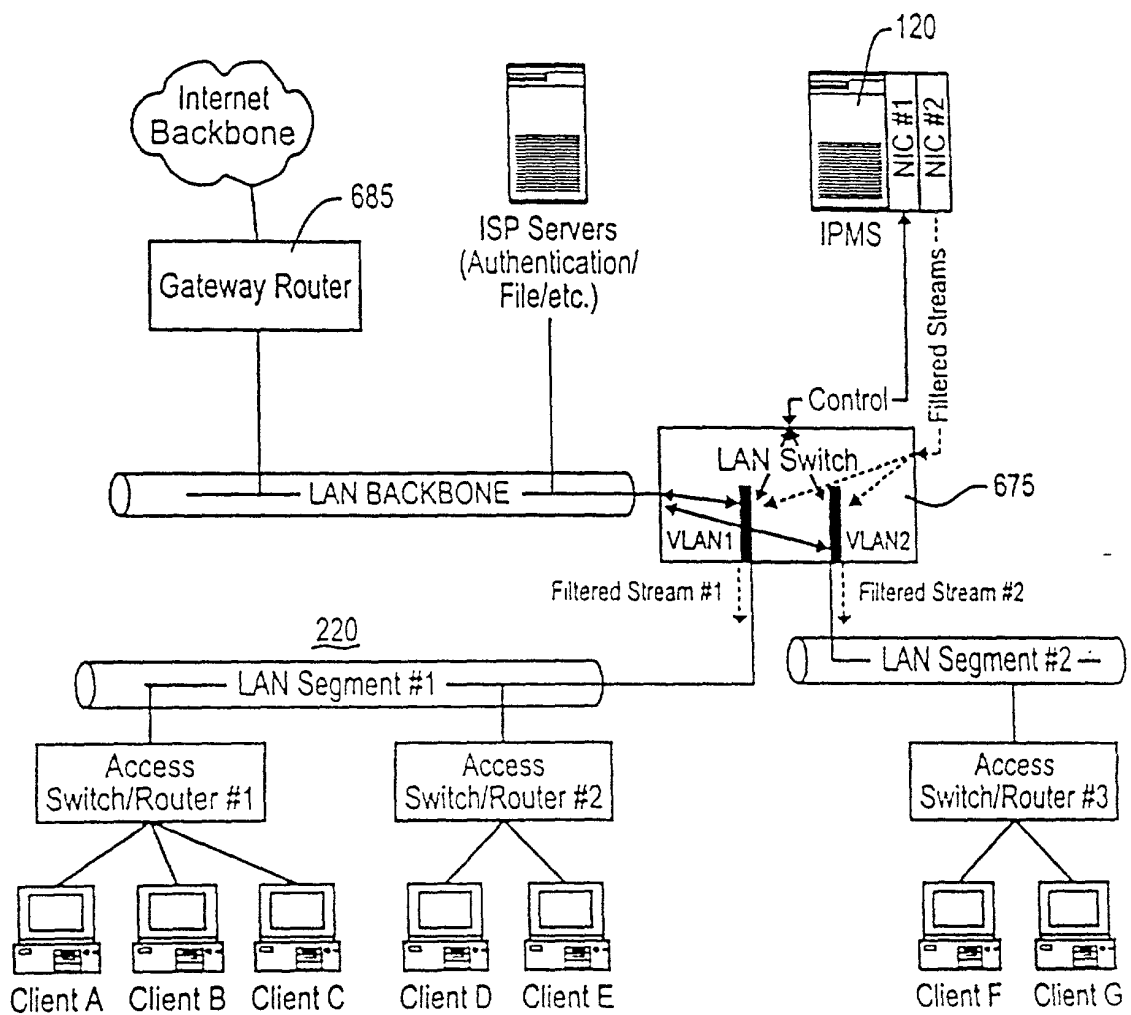


Fig. 22

25 157

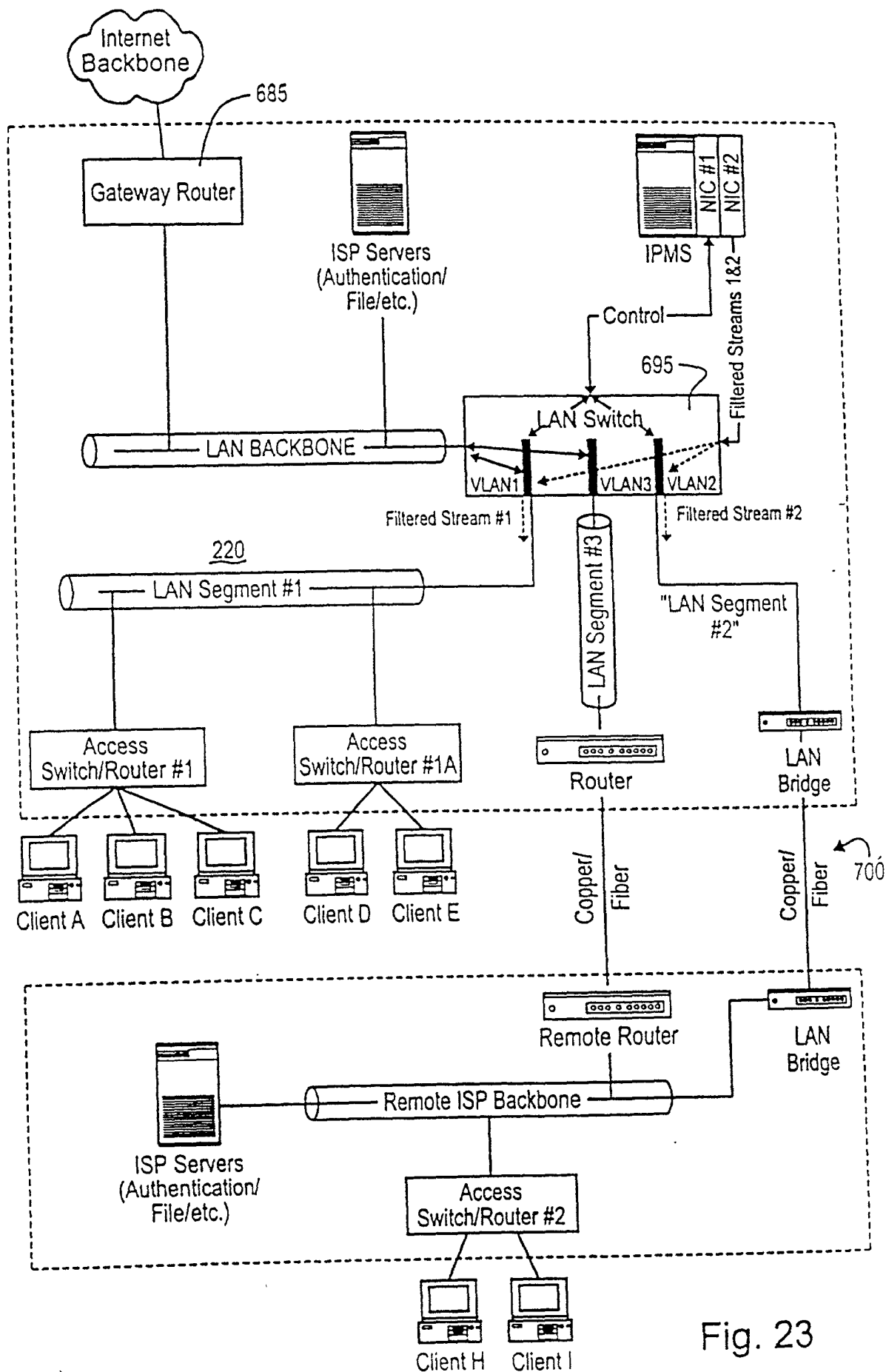


Fig. 23

Handwritten note: 2/10/08 = ?

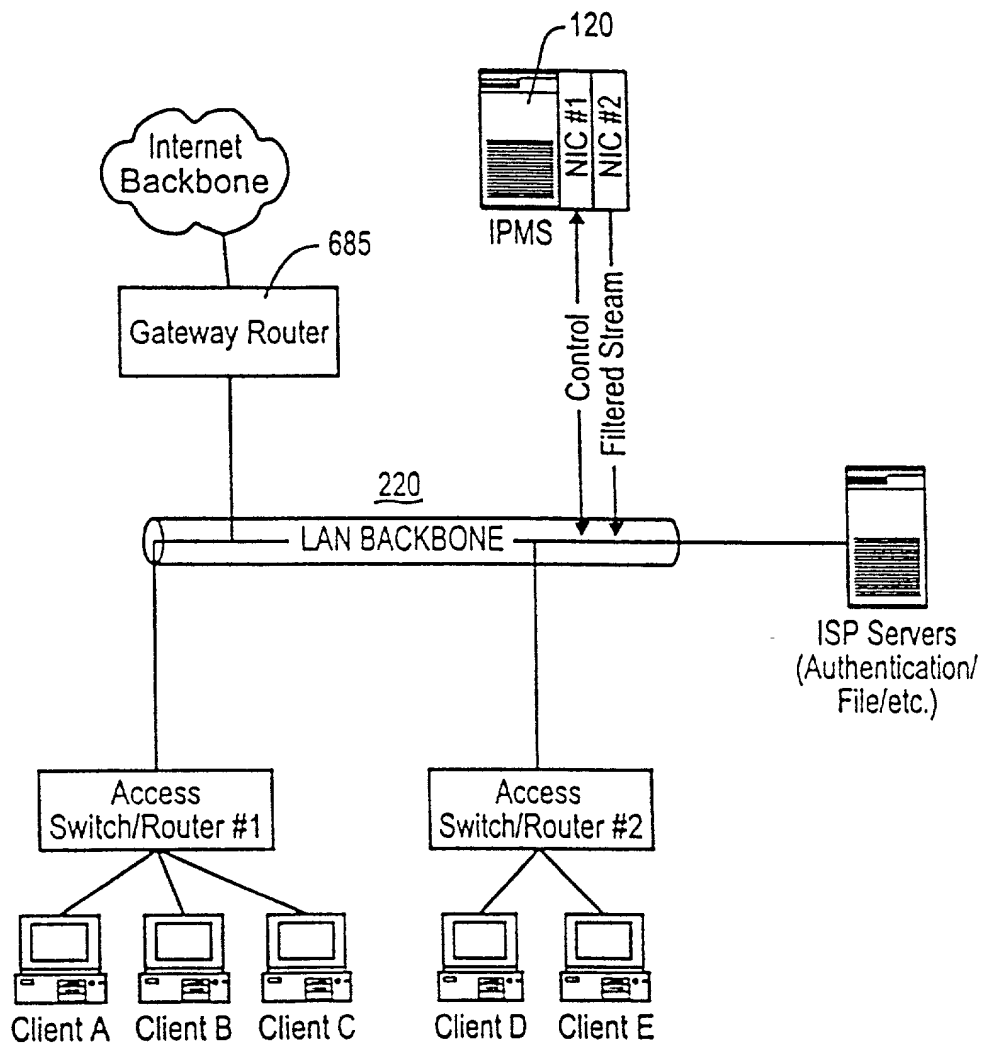


Fig. 24

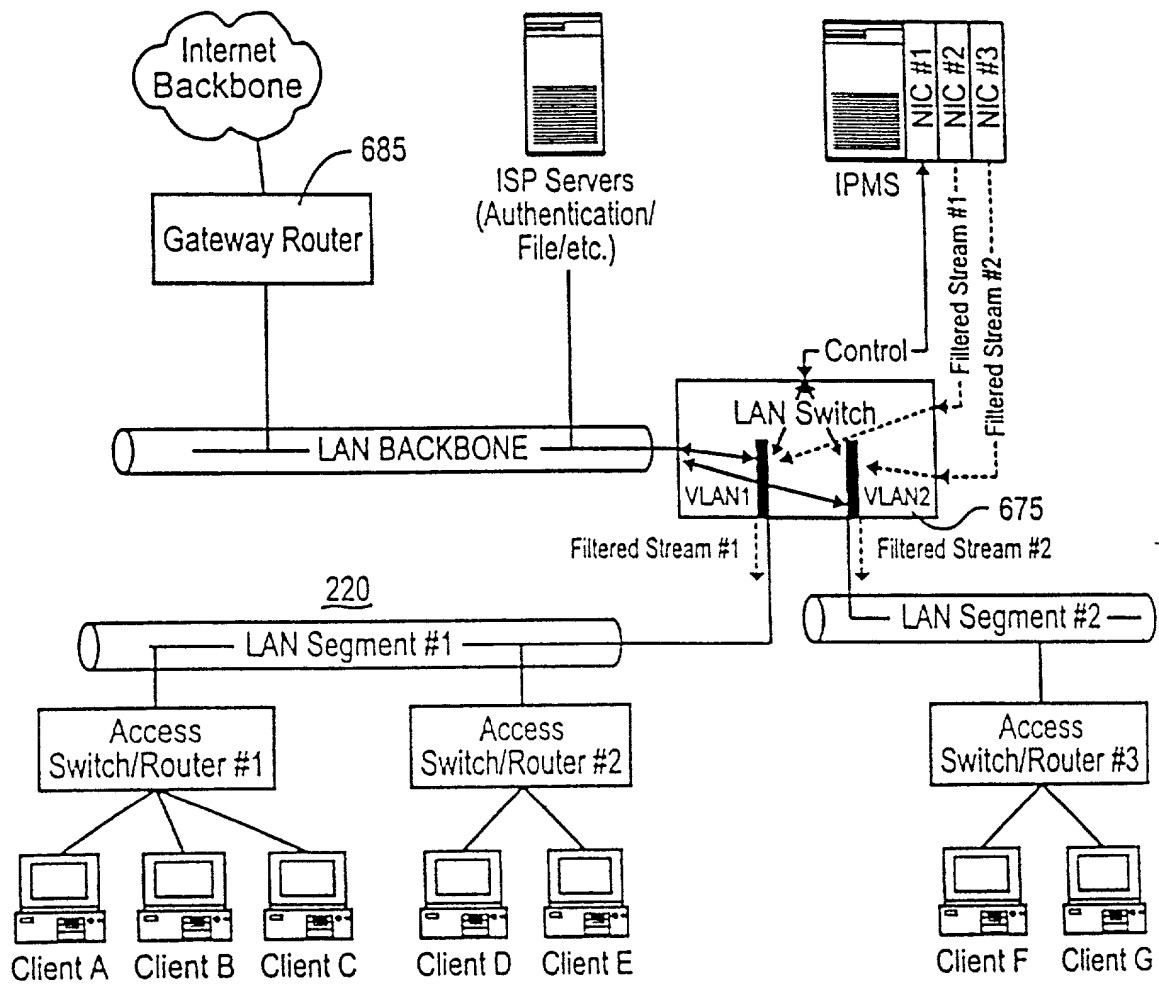


Fig. 25

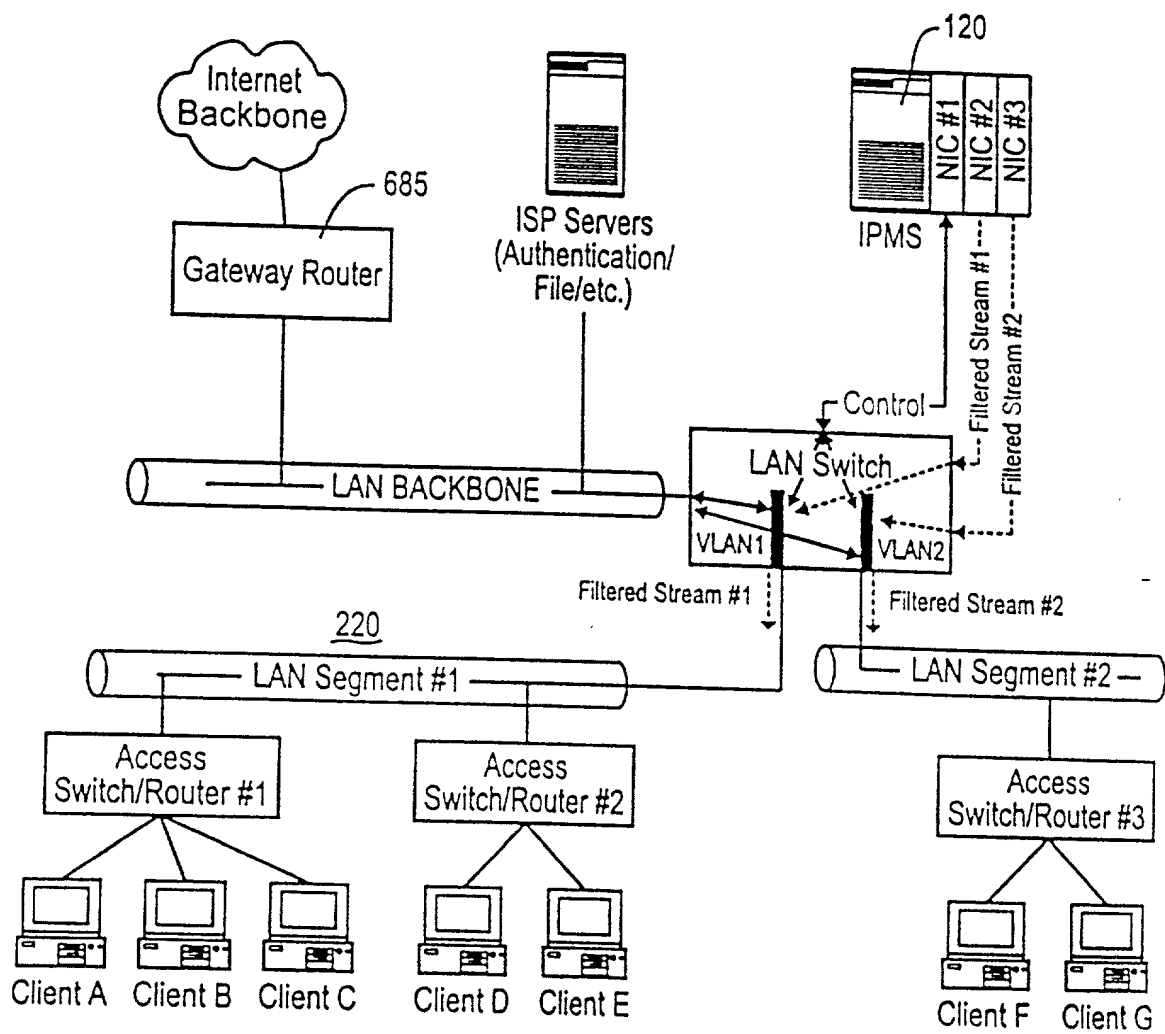


Fig. 26

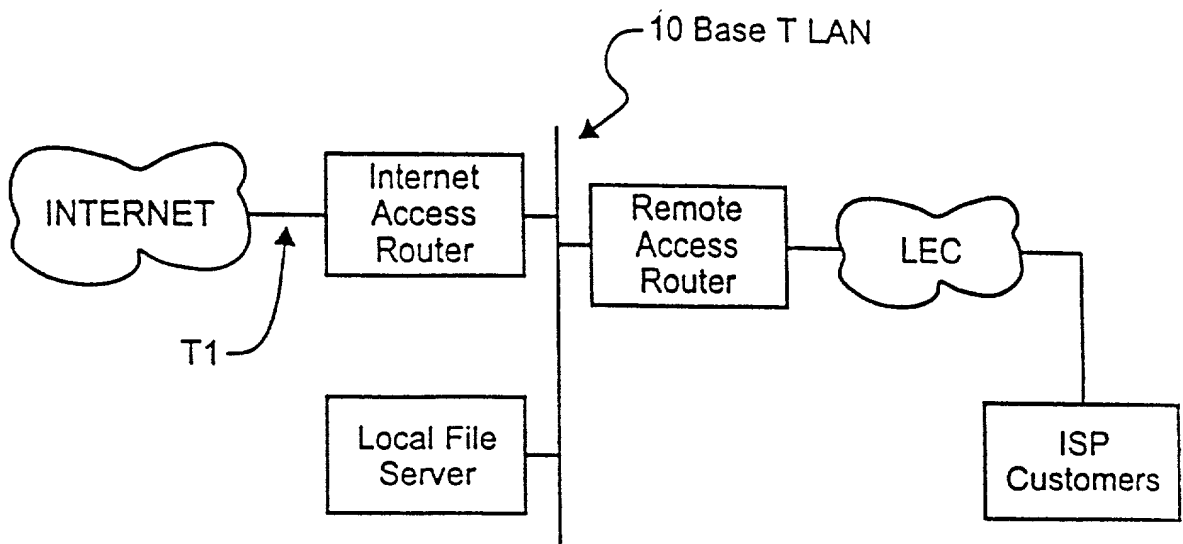


Fig. 27

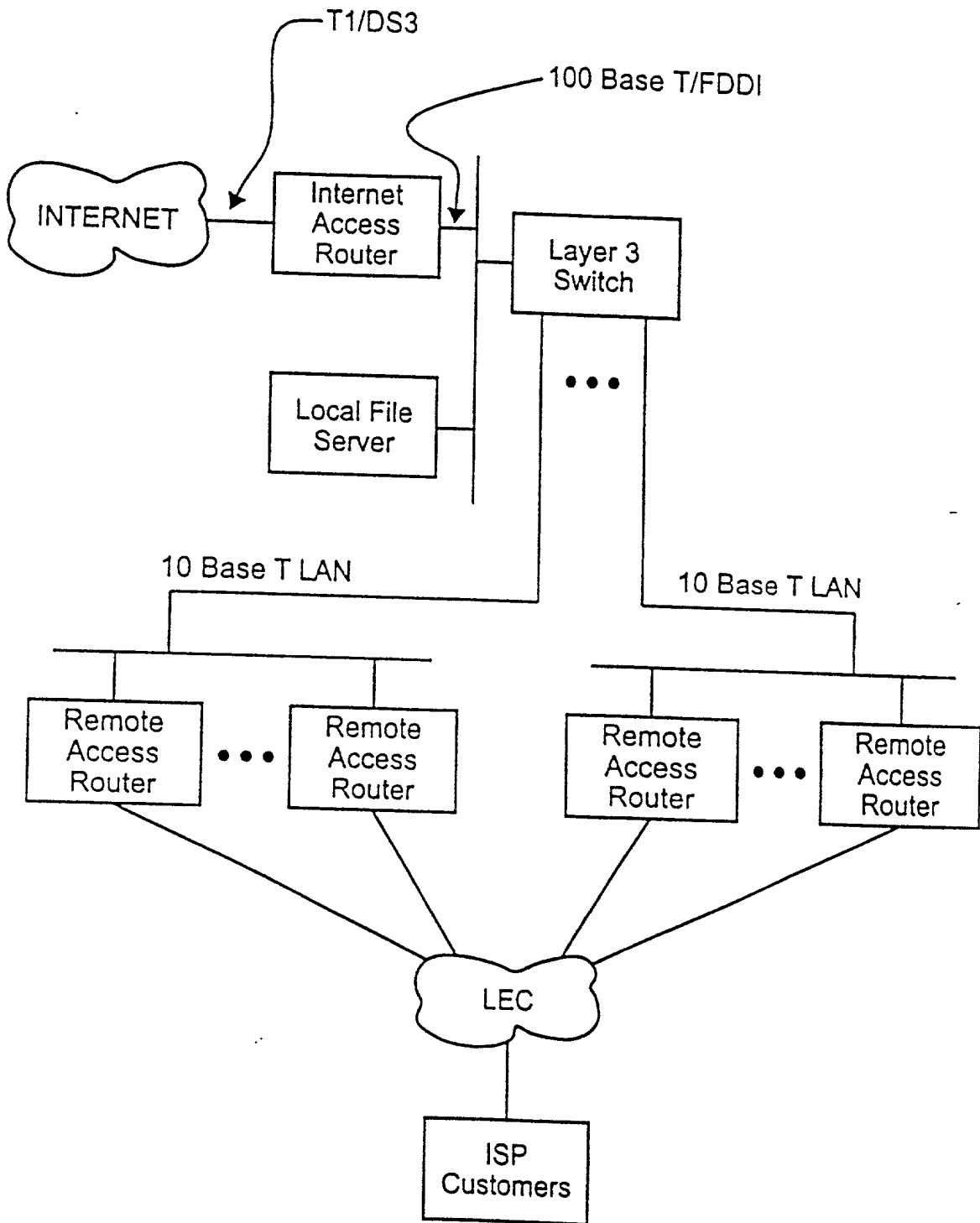


Fig. 28

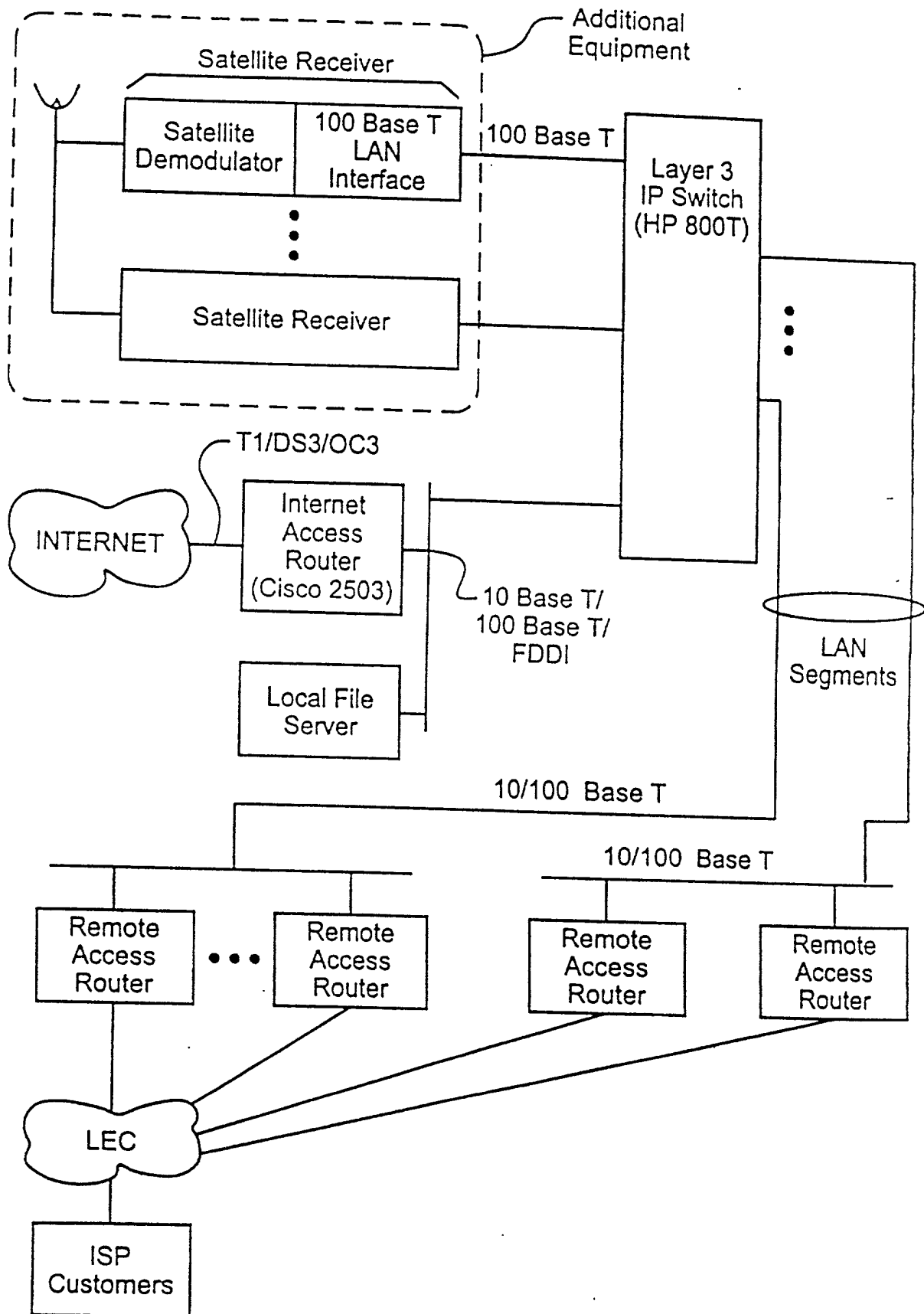


Fig. 29

800'

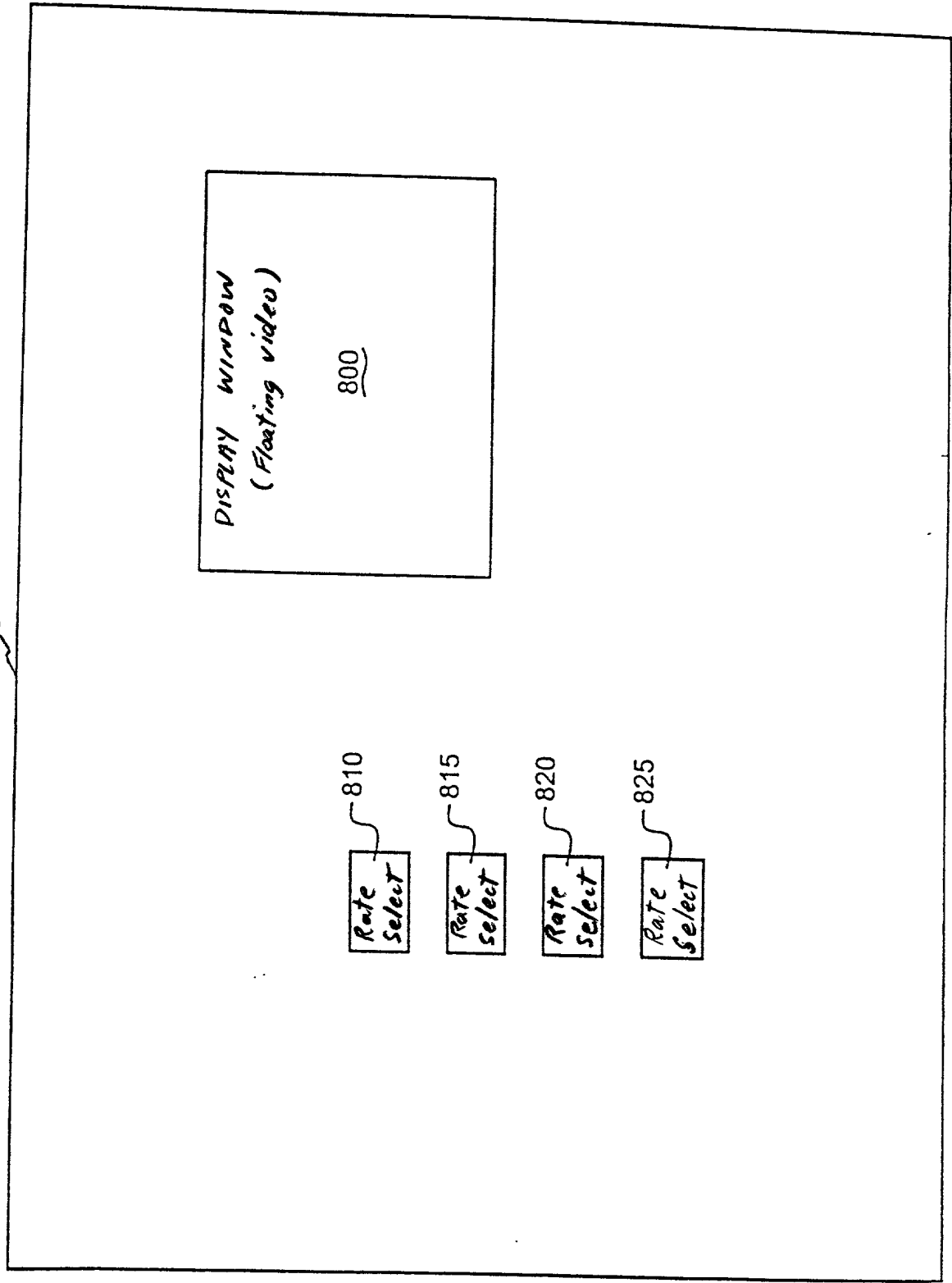
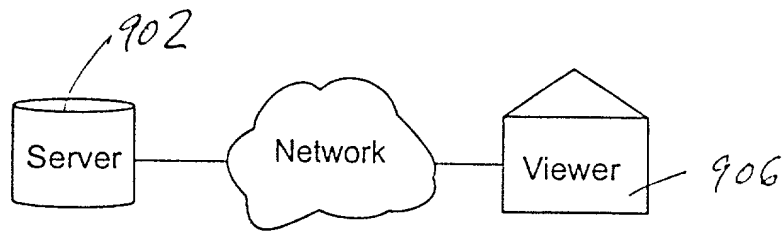


Fig. 30



Example ~~data~~ ^{IP data} Figure 31
Content Distribution

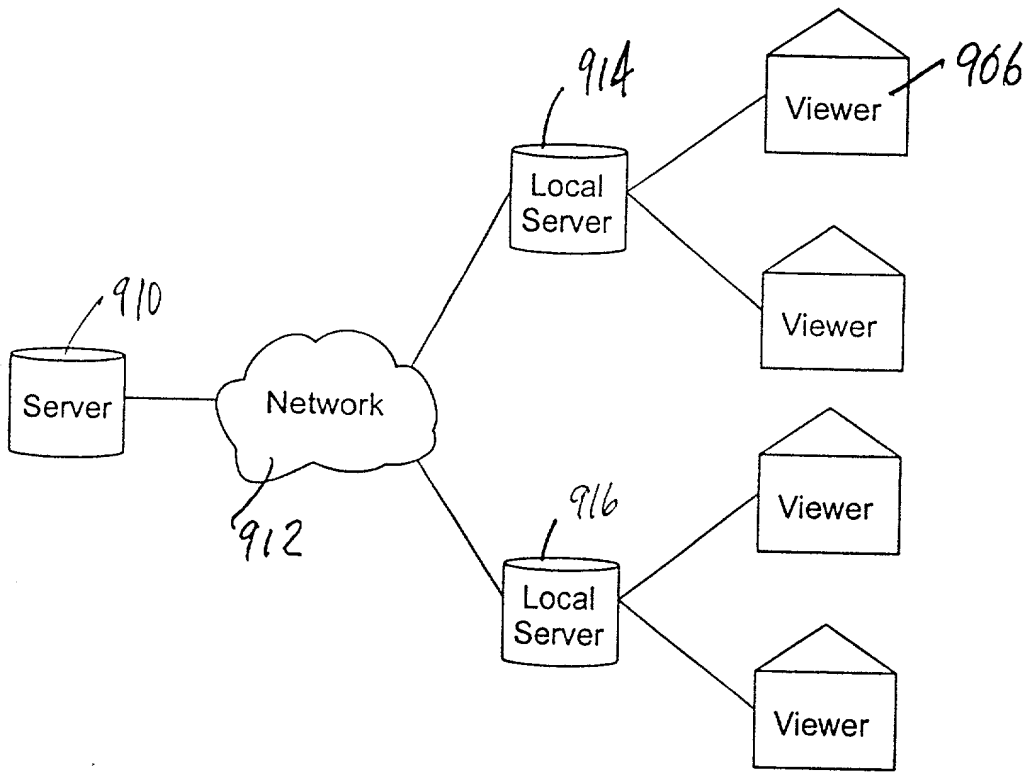


Figure 32
Example Local Video Servers
Audio

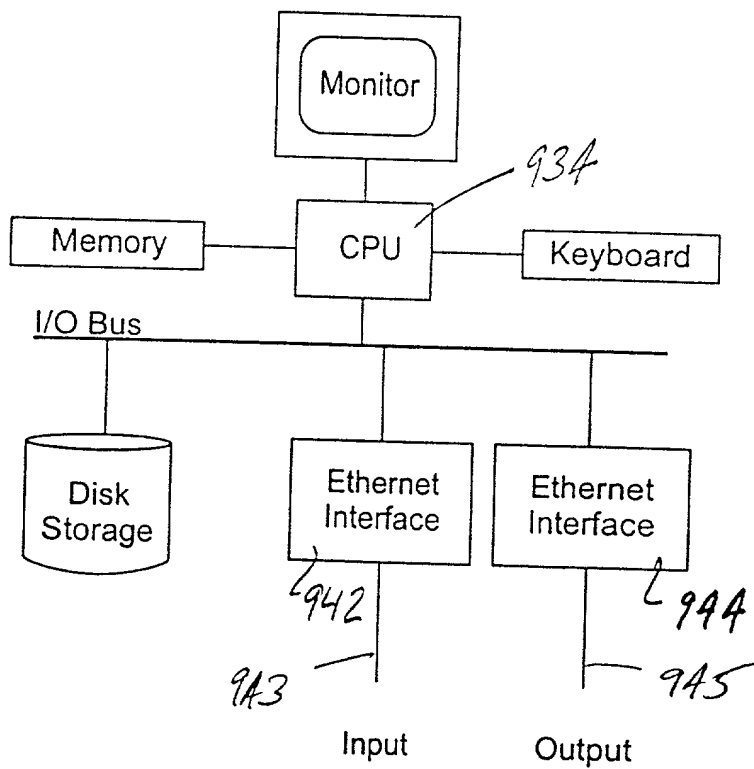


Figure 33
Example Local Server Hardware Configuration

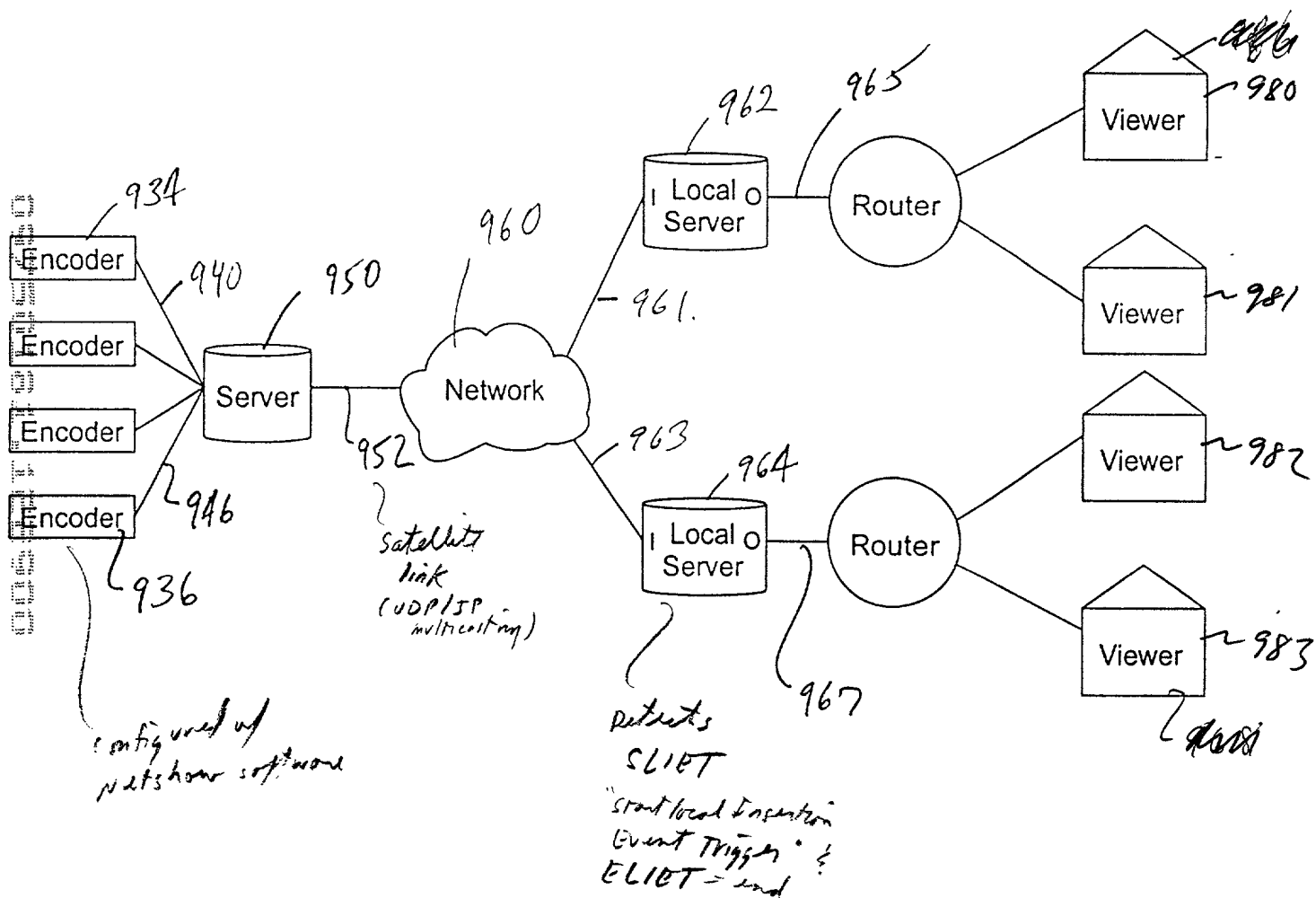


Figure 34
Example Local Multicast Insertion

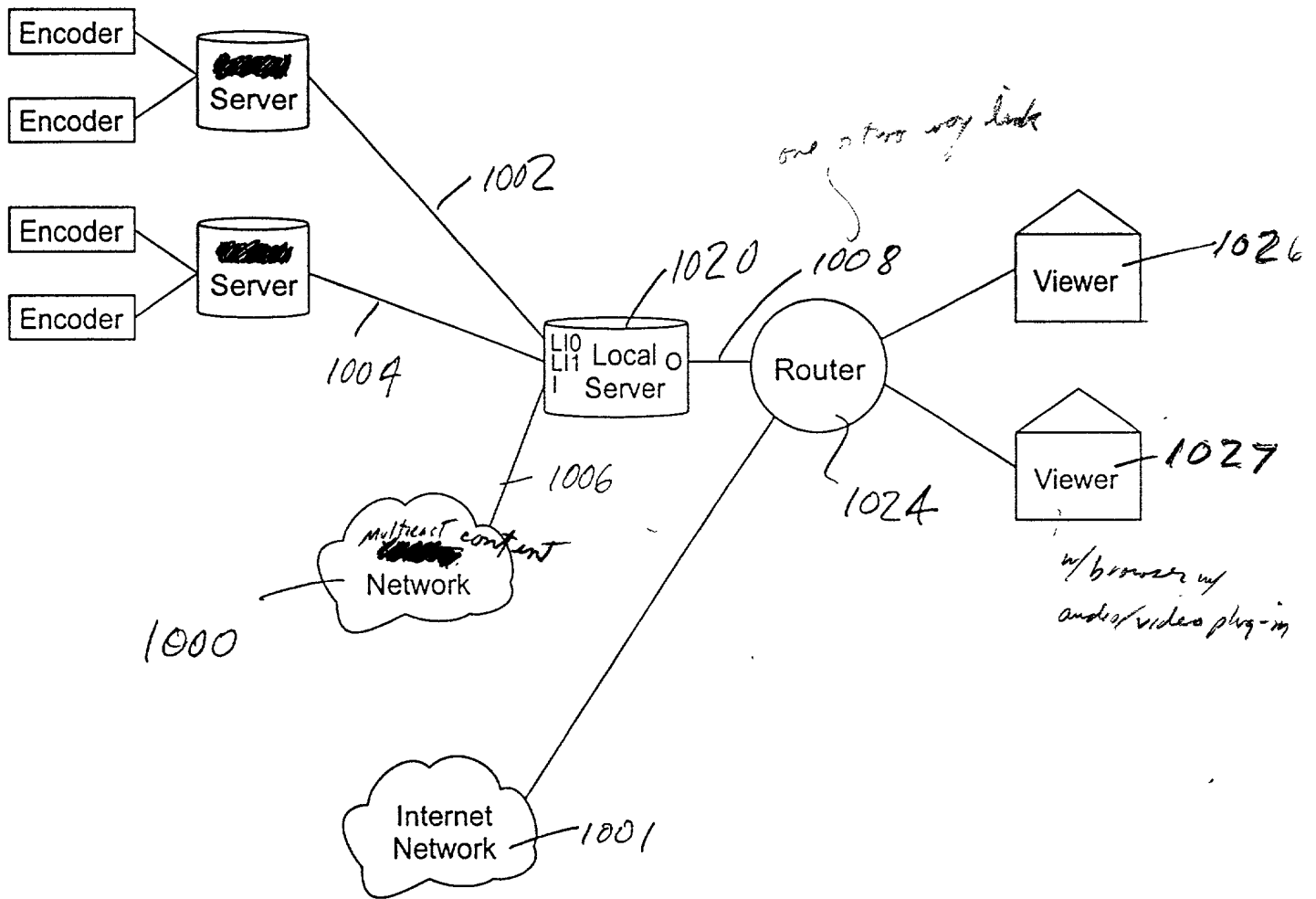


Figure 35
Example Multicast and Internet Configuration

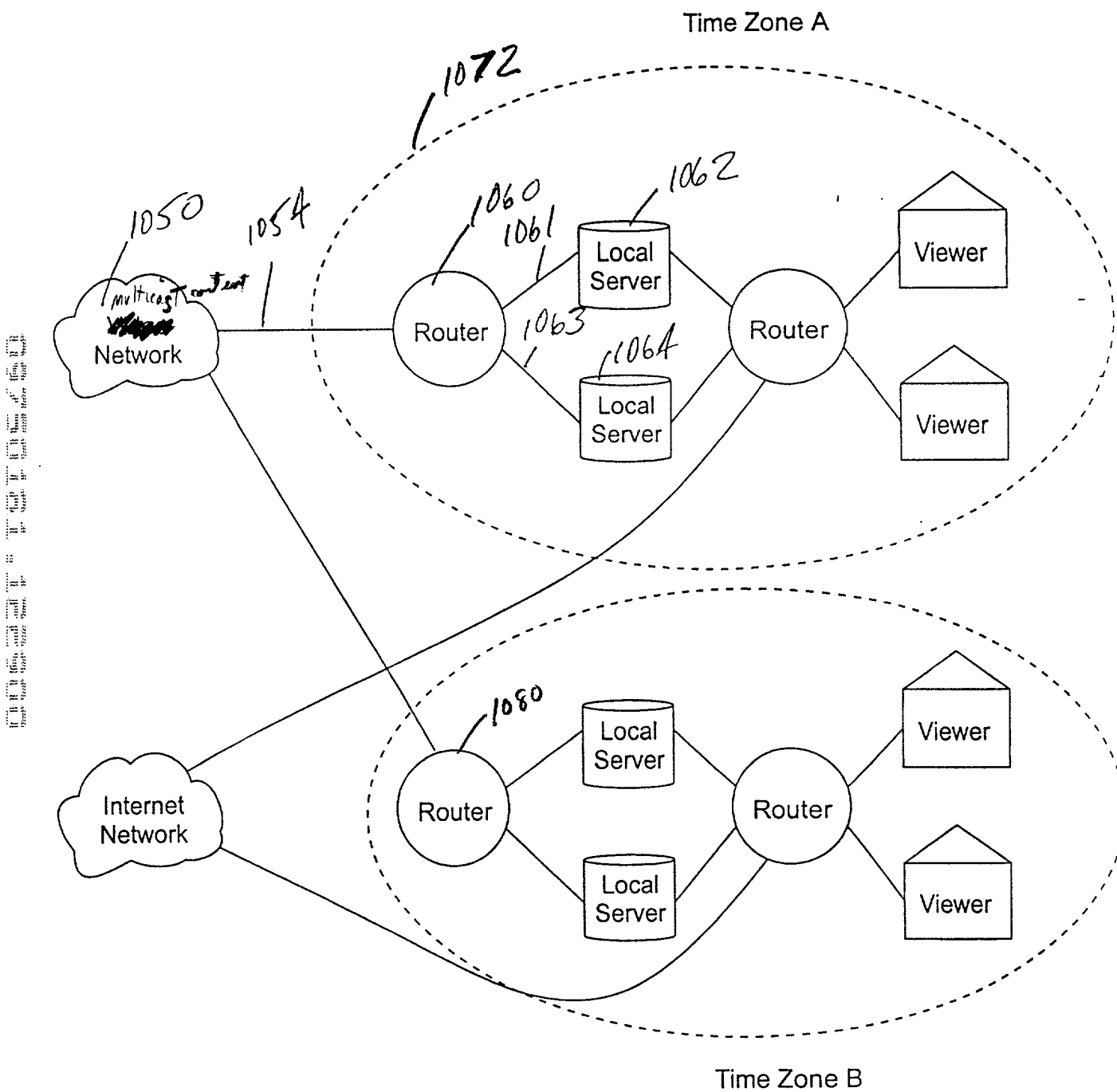


Figure 36
Example Delay Play Configuration

39 of 57

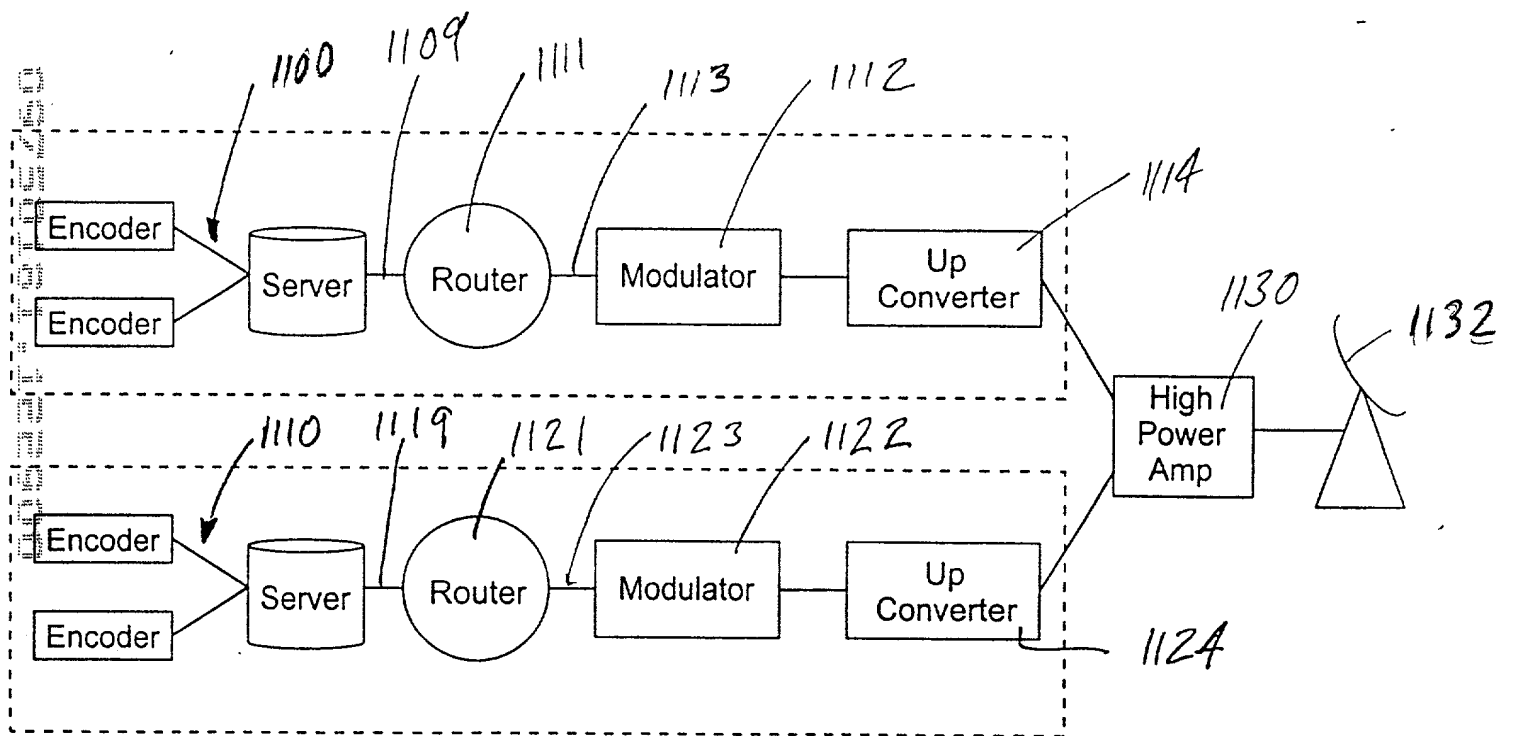


Figure 37
Example Satellite Multicast Uplink Equipment

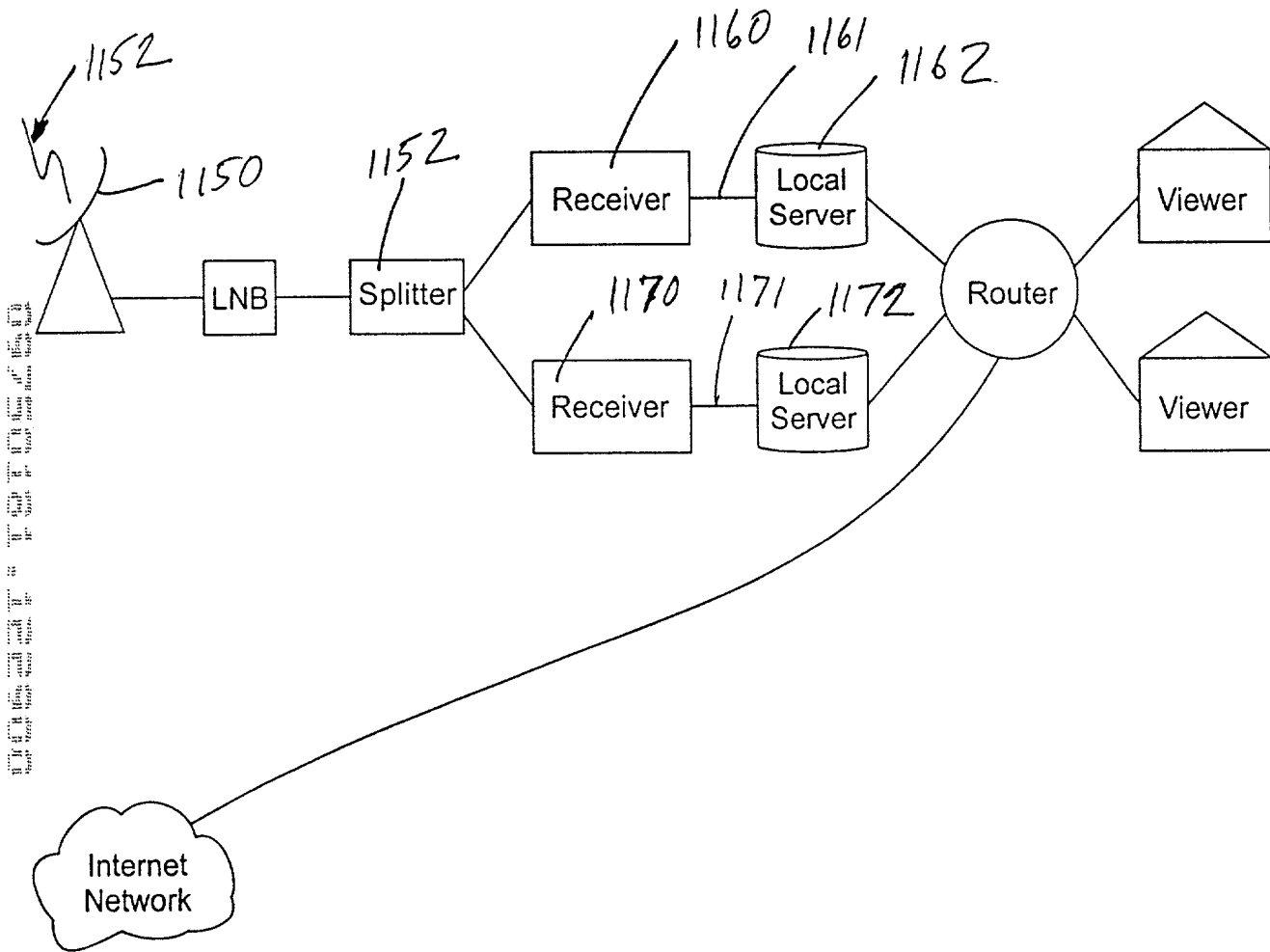


Figure 38
Example Satellite Multicast Downlink Equipment

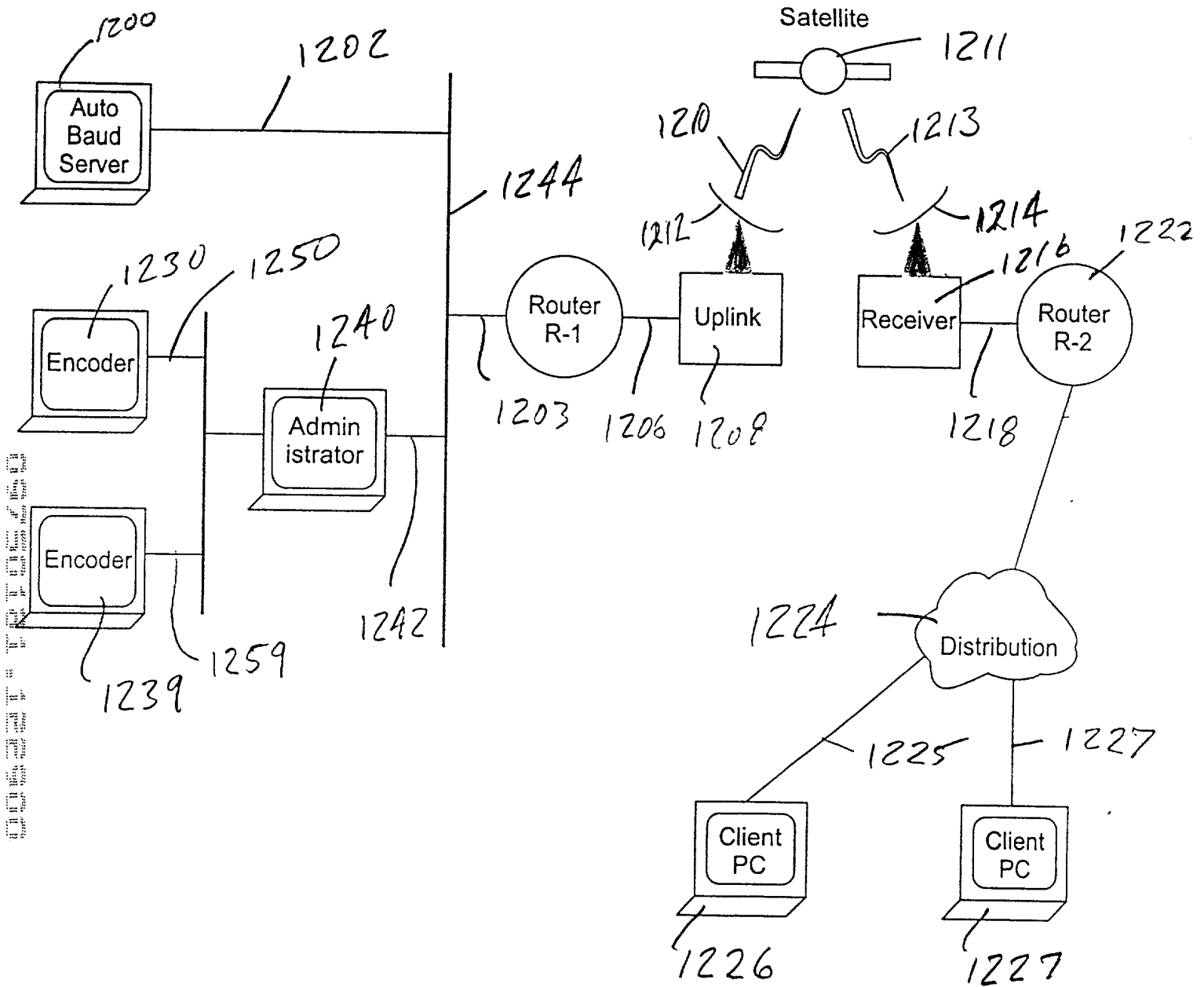


Figure 39
Example Satellite system configuration

6/2 d 57

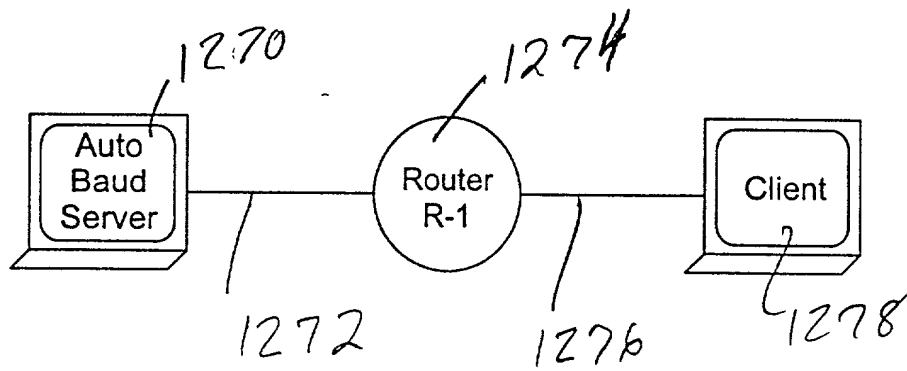
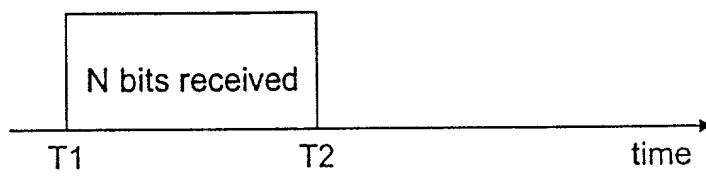


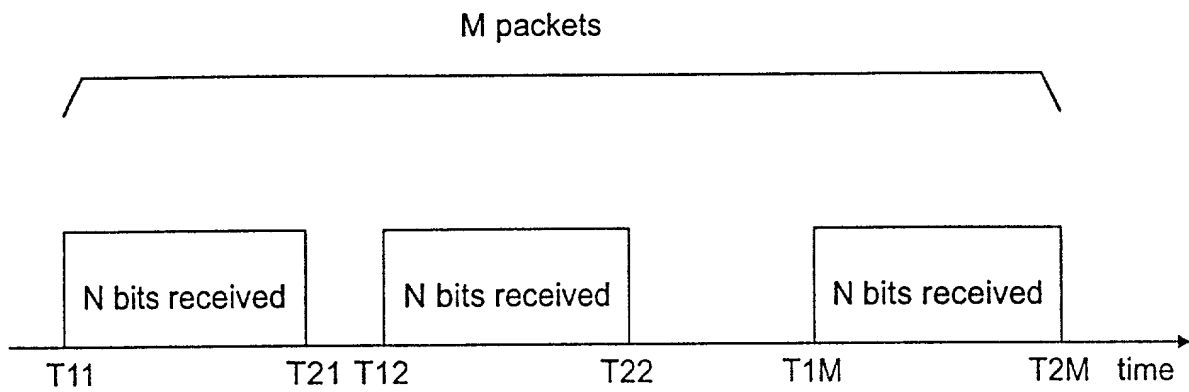
Figure 40
Simplified system configuration



$$\text{Bit Rate} = N / (T2 - T1)$$

Figure 41
Single packet timing diagram

4/4/57



$$\text{Bit Rate} = (M-1) \cdot N / (T2M - T21)$$

Figure 42
Multipacket timing diagram

45 of 57

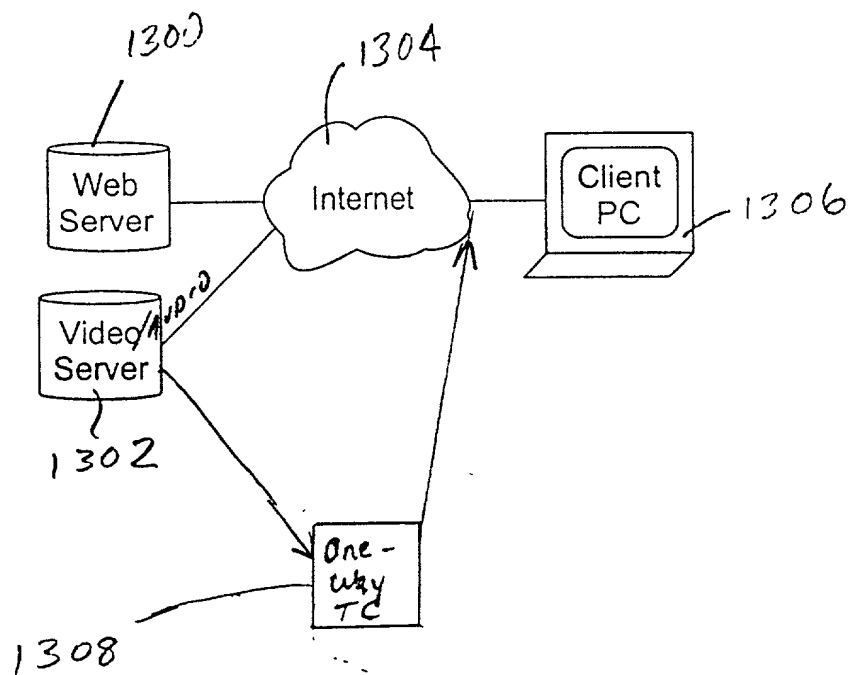


Figure 43
Local Replay System

46 of 57

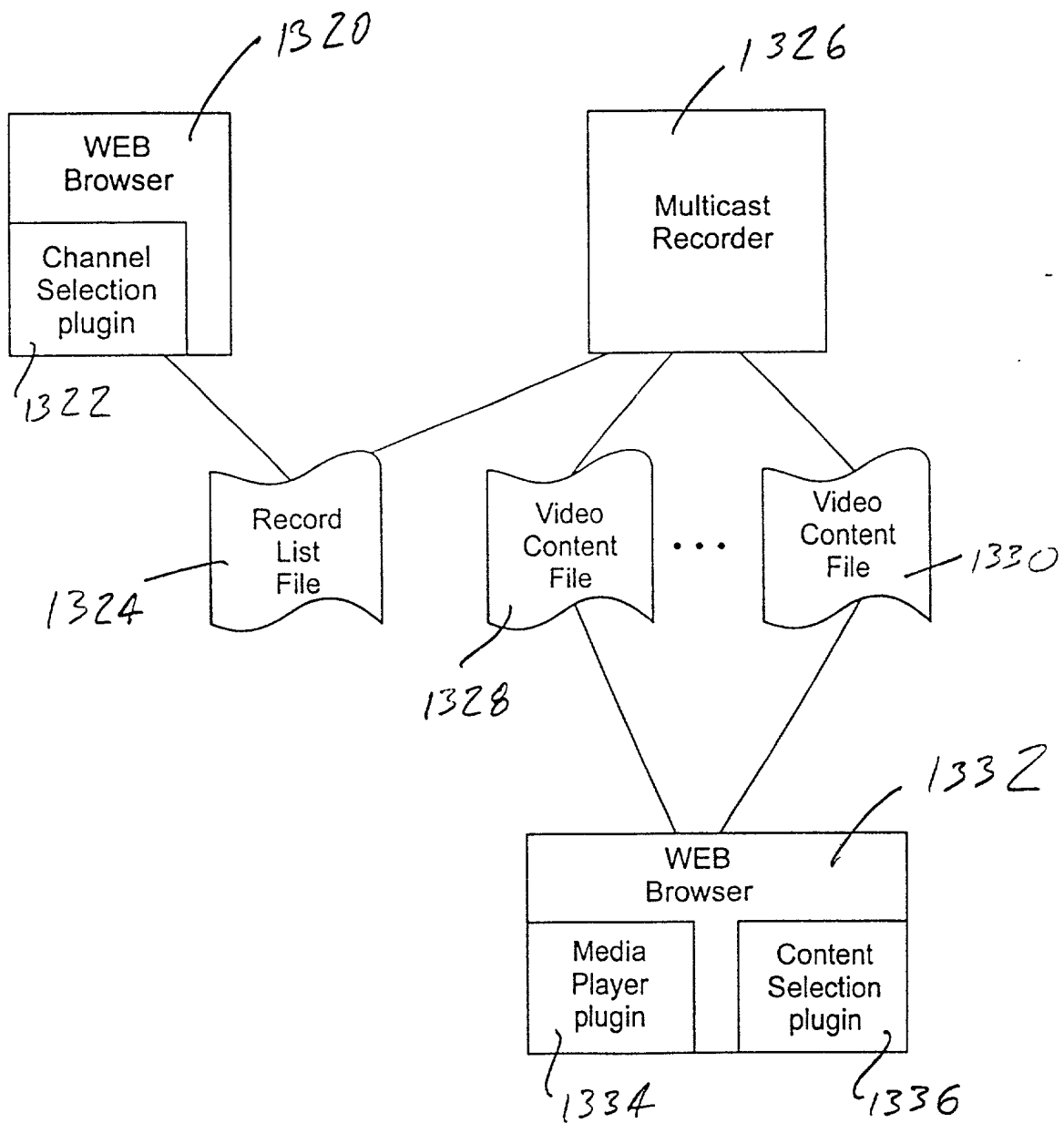


Figure 44
Example Client Software Components

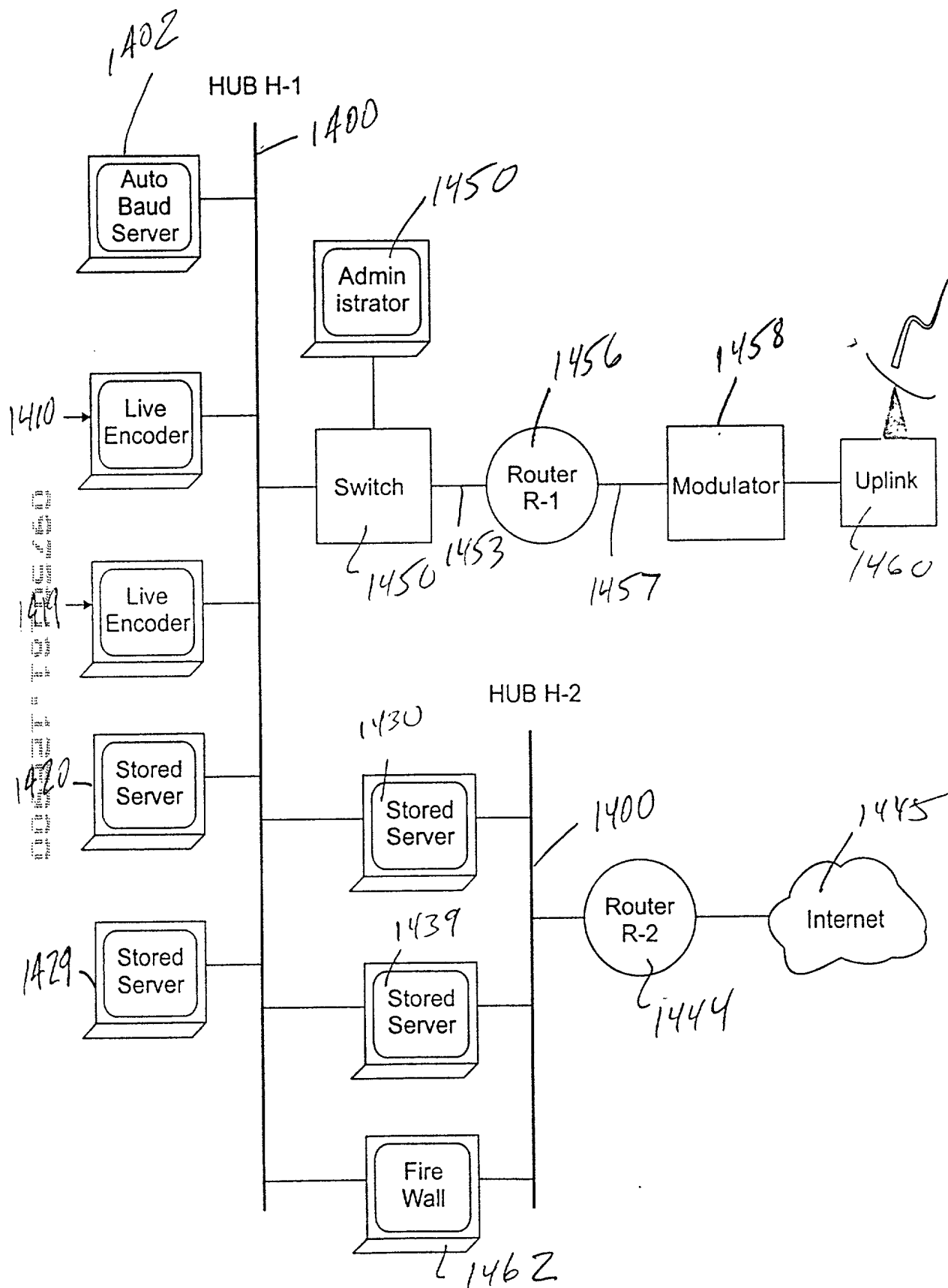


Figure 45
Example Satellite uplink system configuration

48 of 57

Uplink Equipment List

Switch	HP 800T
Router R-1	Cisco 7205
Router R-2	Cisco 2503
Modulator	Raydyne 3030-HSSI
HUB H-1	Allied Telesys CentreCom FH824U
HUB H-2	3-Com SuperStack-II

AB = AutoBaud Server

LEV = Live Encoder - Video

LEA = Live Encoder - Audio

SS = Stored Server

A = Administrator

FW = Fire Wall

HARDWARE	AB	LEV	LEA	SS/A	FW
Keyboard - Generic	x	x	x	x	x
Hard Disk - Generic 10 Gb	x	x	x	x	x
Floppy Disk - Generic 3 1/2	x	x	x	x	x
Monitor - Generic SVGA	x	x	x	x	x
Memory - Generic 128 MB ECC	x	x	x	x	x
Processor - Dual Pentium-III 450 MHZ	x	x	x	x	x
Mother board - SuperMicro P6DGE	x	x	x	x	x
Ethernet IO - 3-Com 3C905 (2 req)	x	x	x	x	x
Audio capture - Creative 128		x	x		
Video capture - Osprey 100		x			
SOFTWARE					
Operating System - Microsoft NT Server 4	x	x	x	x	x
Encoding - Microsoft Media Services 4		x	x		
Fire Wall - Axent Raptor 6					x

Figure 46

Example Satellite uplink system equipment list

49 of 57

Example ~~Downlink~~ Downlink Equipment

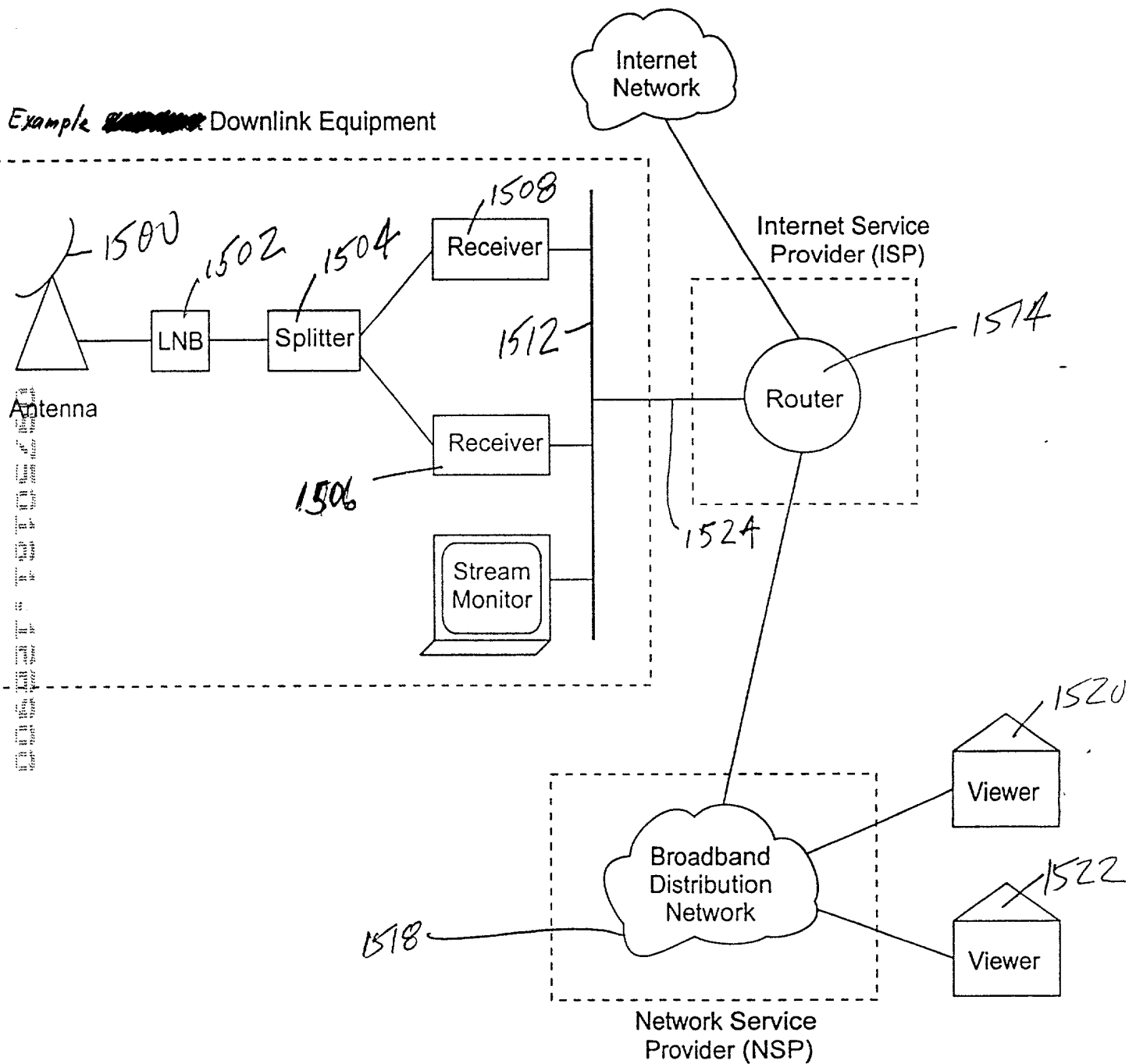


Figure 47

Example ISP Connected ~~Downlink~~ Downlink Equipment

50/57

Example

~~Example~~ Downlink Equipment

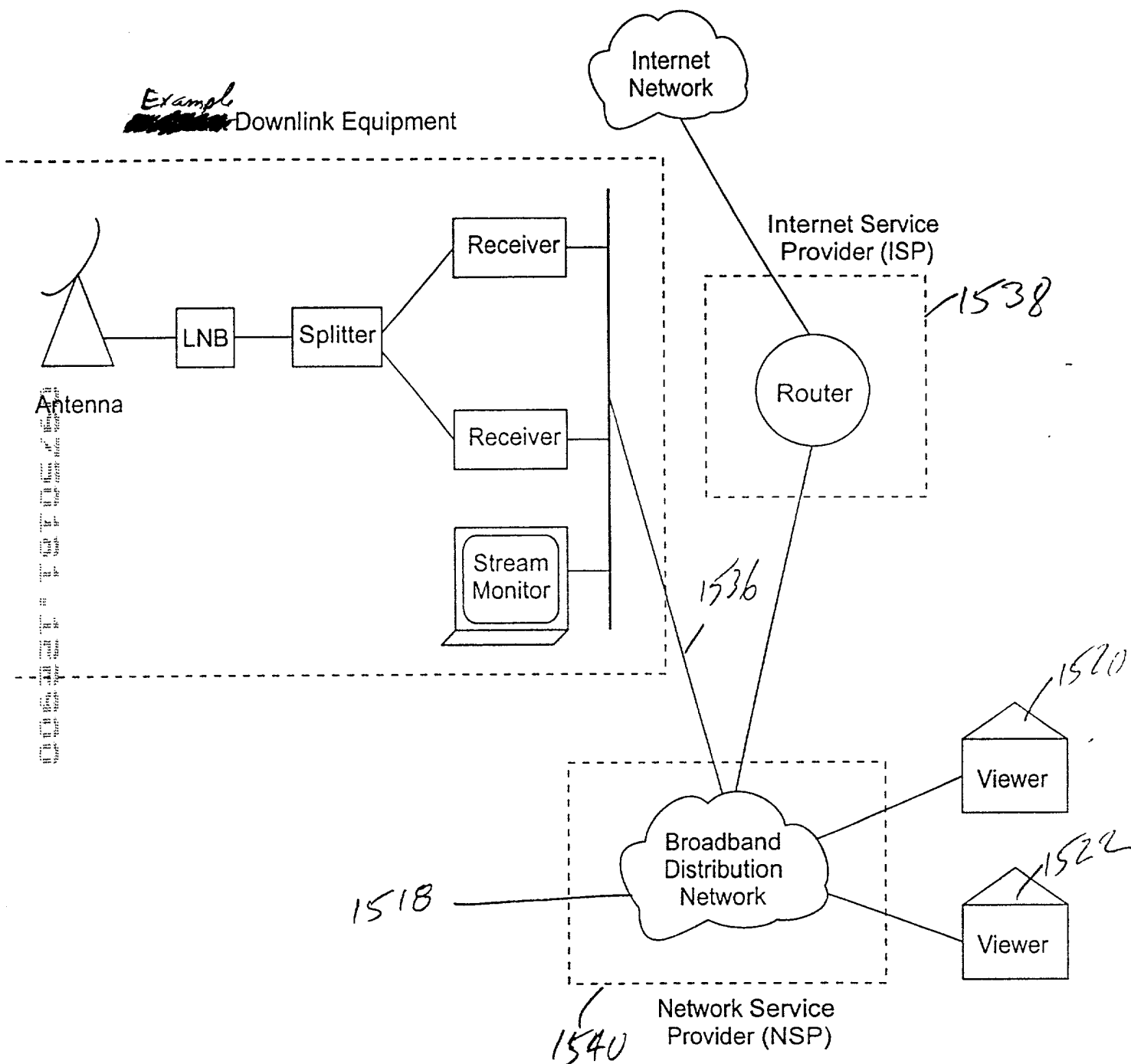


Figure 48

Example NSP Connected ~~Example~~ Downlink Equipment

51 of 57

Example

Downlink Equipment List

HUB Allied Telesys CentreCom FH824U

Antenna Prodlin

LNB ??

Receiver (2req) StarGuide Digital SG-II with 100BaseT Ethernet card

HARDWARE

Keyboard - Generic

Hard Disk - Generic 10 Gb

Floppy Disk - Generic 3 ½

Monitor - Generic SVGA

Memory - Generic 128 MB ECC

Processor - Dual Pentium-III 450 MHZ

Mother board - SuperMicro P6DGE

Ethernet IO - 3-Com 3C905

SOFTWARE

Operating System - Microsoft NT Server 4

downlink

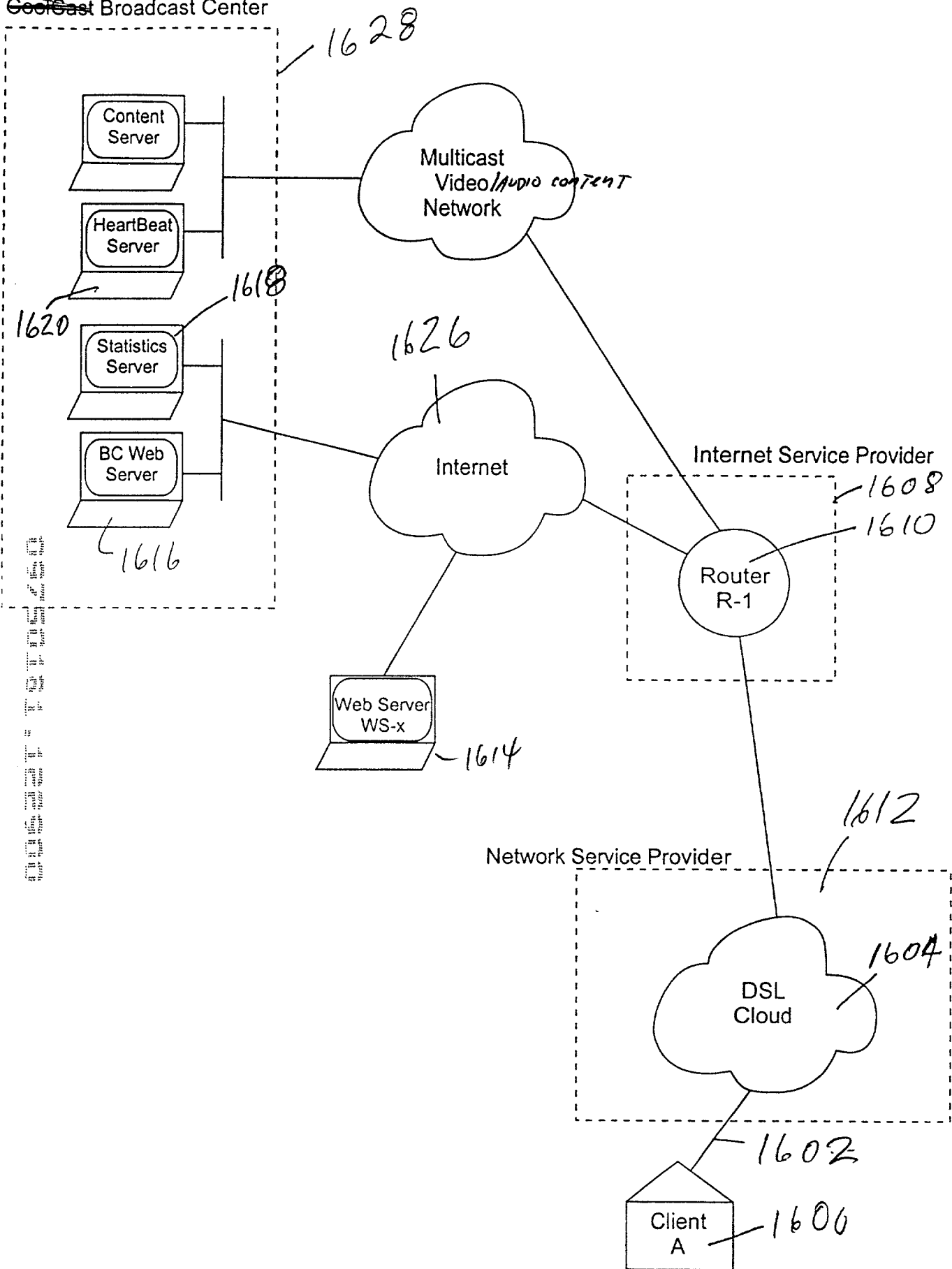
Figure 49

Example Satellite ~~downlink~~ system equipment list

52 of 57

Video/audio content

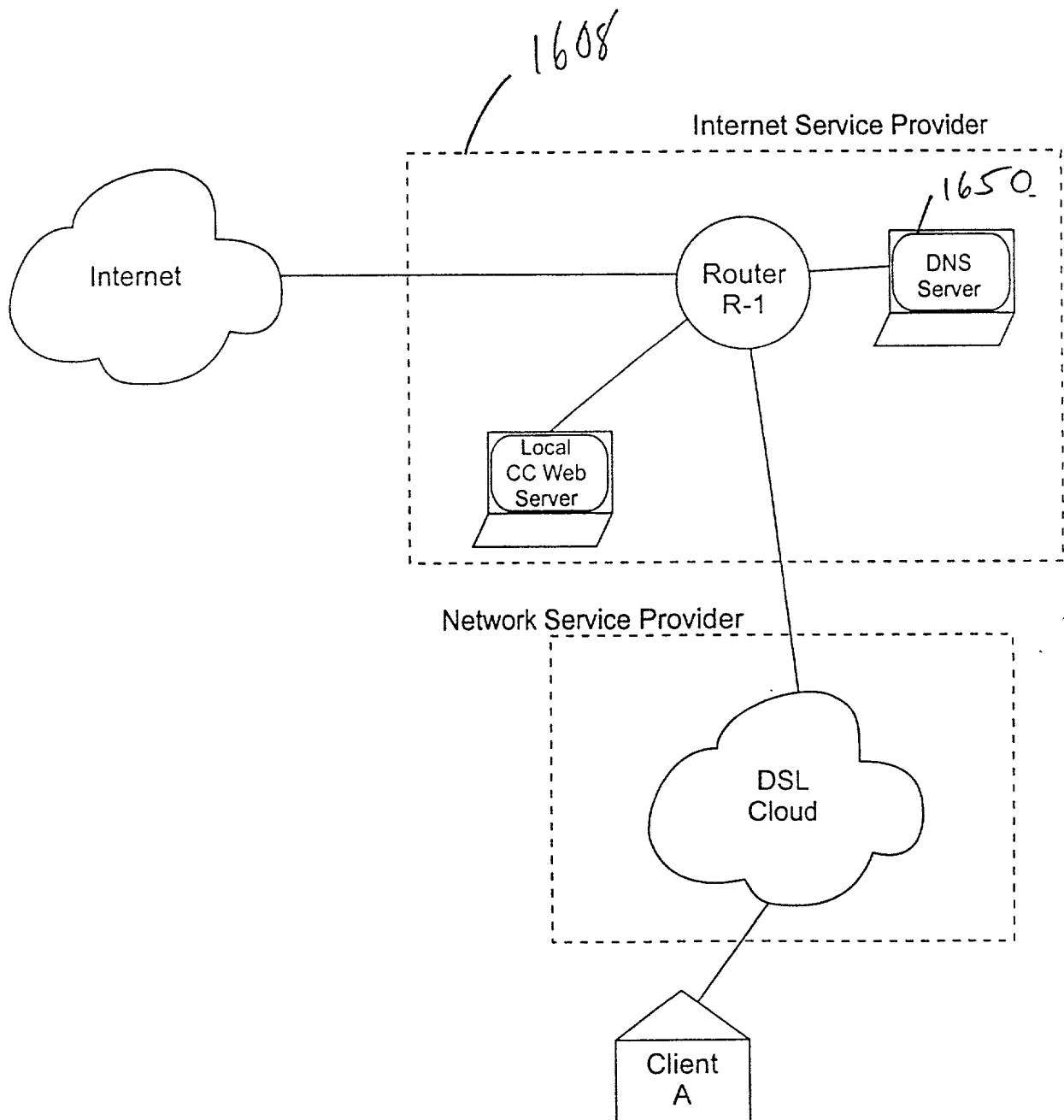
~~Cast~~ Broadcast Center



audio content

Example National Video Distribution Architecture

Figure 50



Example Configuration for Local Co-Branding of National Content

Figure 51

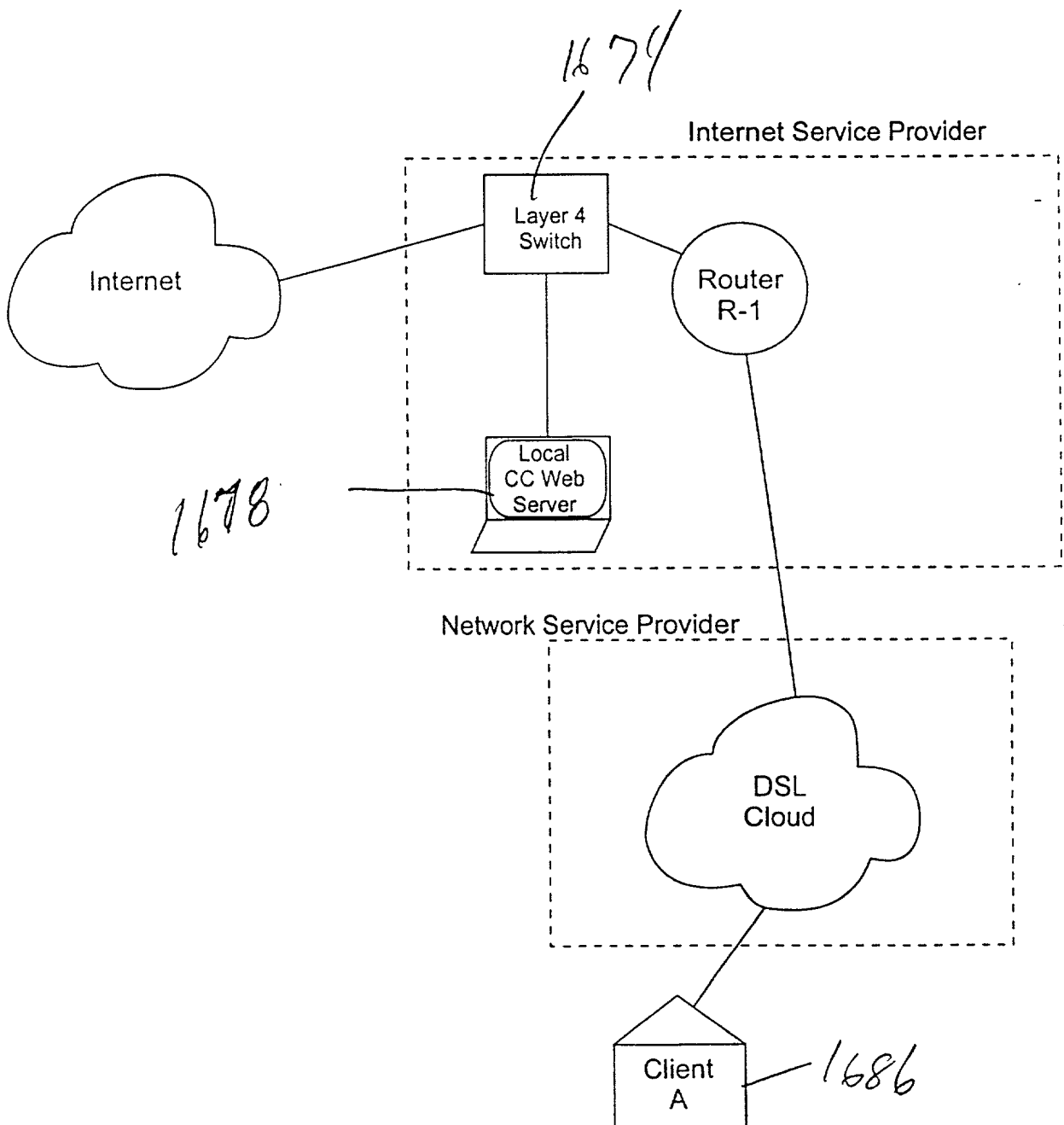


Figure 52

Example configuration for Local Co-Branding of National Content

CoolCast Broadcast Center

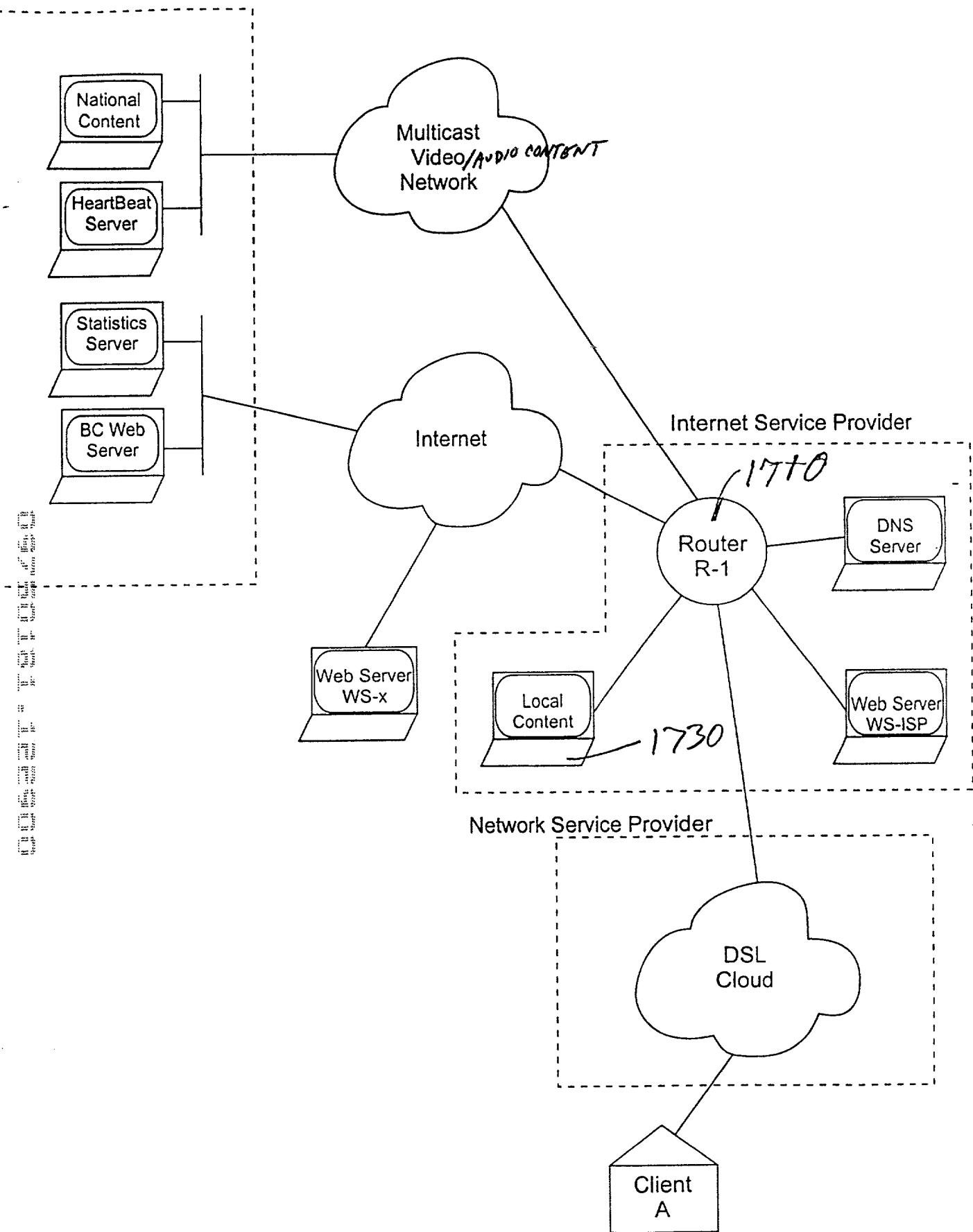


Figure 53

Example Configuration for Local Content Insertion with Local Co-Branding

CoolCast Broadcast Center

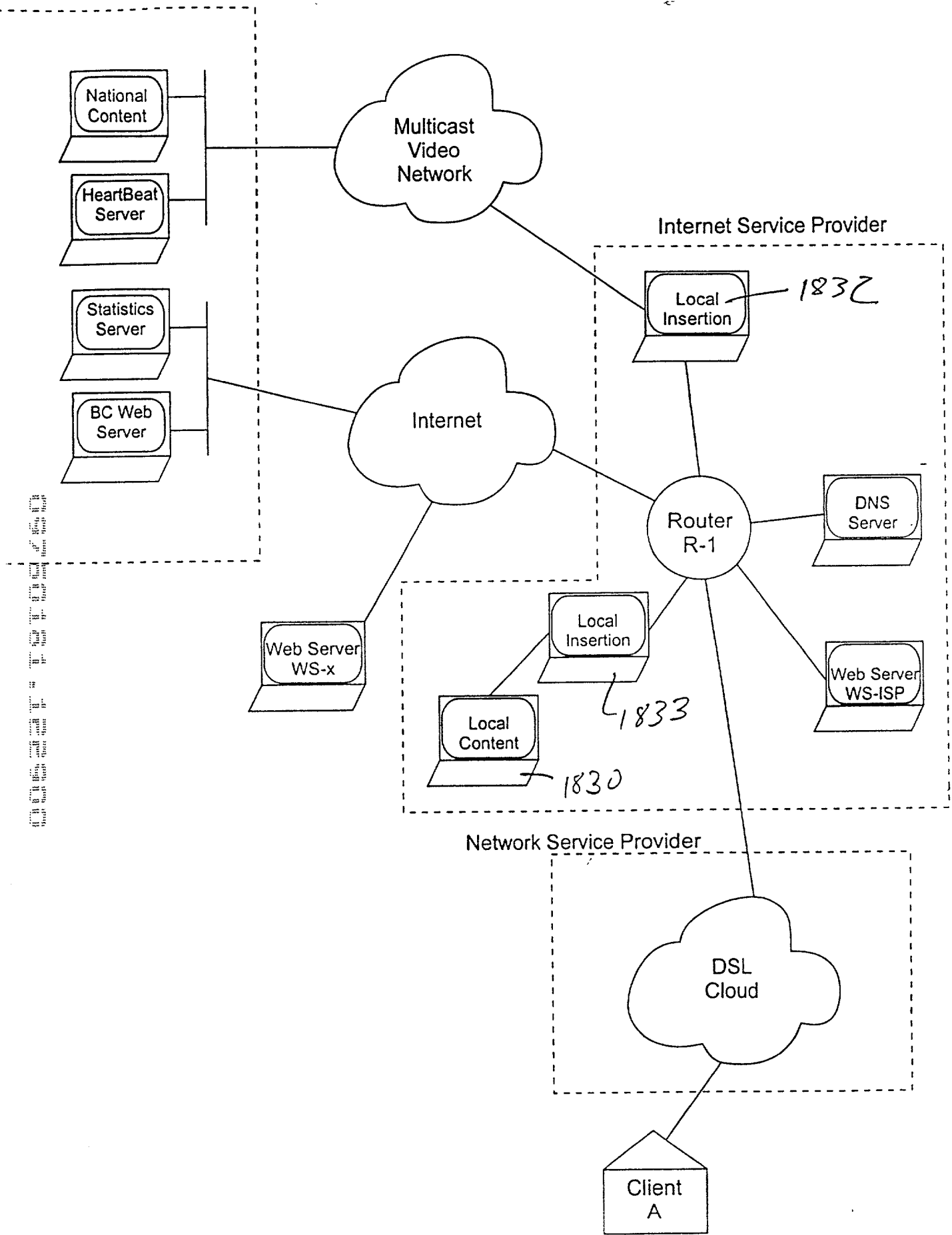


Figure 54

Example configuration for Local Content and Ad Insertion with Local Co-Branding